

Assessing Short-Term Financial Health in Cooperatives: An Application of Fleuriet's Dynamic Model

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Abstract: *This study analyzes the working capital management of an agro-industrial cooperative using Fleuriet's Dynamic Model as a diagnostic tool for short-term financial resource allocation. Employing a descriptive and exploratory quantitative design, the research draws on financial statement data from a cooperative over the period 2018–2022. The results demonstrate that Fleuriet's Dynamic Model offers a comprehensive assessment of working capital status, effectively highlighting the condition of short-term financial resources. These findings suggest that the model serves as a valuable decision-support instrument for financial managers, with implications for improving liquidity management and organizational sustainability. This study contributes to the academic literature on cooperative finance and provides practical insights for administrators and policymakers in the agro-industrial sector.*

Keywords: Working capital management; Fleuriet's Dynamic Model; Agro-industrial cooperative; Short-term finance; Financial decision-making.

1. INTRODUCTION

In recent years, the Brazilian agribusiness sector has taken on a prominent position in the national economic landscape. Among the factors explaining the sector's growth are the increase in exports and record harvests, resulting from the capacity to expand productivity and the development of various technologies that drive new businesses in all regions of the country. According to the Center for Advanced Studies in Applied Economics (CEPEA) of Esalq/USP, in partnership with the Confederation of Agriculture and Livestock of Brazil (CNA), agribusiness GDP accounted for 24.4% of Brazil's GDP in 2023, totaling R\$ 2.6 trillion that year – the third highest value in the historical series started in 1996, behind only 2021 and 2022 (CEPEA/CNA, 2024).

With this performance, the sector has been one of the most dynamic in the Brazilian economy, providing opportunities and entrepreneurship in rural areas and being one of the main drivers of the country's progress. Furthermore, the segment stands out from others for its resilience in periods of economic and financial crisis, as observed during the COVID-19 pandemic.

In this context, despite the adversities, the agribusiness sector in Brazil has consolidated itself as one of the fundamental pillars of the national economy, and cooperativism plays a central role in this process, by providing rural producers with greater control over their production processes, access to specialized technical assistance services, and the incorporation of new technologies that ensure the addition of value to their production.

Following the success of agribusiness, the cooperative movement has registered significant growth over the last few years. The number of agricultural cooperatives reached 1,179 in 2023, with more than 1 million members; the sector generated 257 thousand direct jobs, bringing quality of life and development to all of Brazil (OCB, 2024).

However, despite all the performance achieved, agricultural cooperatives, and particularly agro-industrial ones, are increasingly seeking to innovate their processes, mainly due to the growing competitiveness and productivity in industries in general, pressuring cooperatives to reach a competitive level that ensures their sustainable survival. In this sense, it is essential for agricultural cooperatives to be attentive to all aspects that permeate their management processes, involving the economic, administrative, technical, and social sides.

Schneider (2012) highlights that a cooperative is an entity that, like any economic enterprise, must be guided by economic rationality, with a clear definition of objectives and means, and that requires internal discipline, order, planning, proper use of resources, and hierarchy in pursuing its objectives. In this sense, a good economic

performance of a cooperative will bring the expected results, according to its productivity and quality of its products and services, ensuring the cooperative's capitalization, whether through self-capitalization strategies or access to third-party capital, without compromising its autonomy.

However, in the face of the reality of a challenging scenario, with a competitive and globalized environment, economic turbulence, and inflationary crises, cooperatives live in a constant dilemma: deciding between cooperative principles and the needs imposed by the market. Financial management is a clear example of this indecision in their investment process, where cooperative societies must decide for self-capitalization via members or, through a more bitter way, indebtedness through credit with financial institutions, via generally short-term and high-cost loans. Bianchini Jr (2019, p. 18) highlights this issue:

From this perspective, and considering the relevance of efficient working capital management, essential to ensure liquidity, solvency, profitability, and short-term financial health, the present research is justified by the analysis and interpretation of a working capital management model applicable to agro-industrial cooperatives. The objective is to identify factors that can contribute to effective management of financial resources, thereby promoting the sustainability and long-term continuity of these organizations.

Thus, the main objective of the research is to analyze working capital in the light of Fleuriet's Dynamic Model of an agro-industrial cooperative, aiming to highlight the contribution of this model as a tool for the calculation, control, and efficient management of the organization's short-term financial resources.

The article is structured into five chapters. The first section corresponds to the introduction. The second section addresses the theoretical framework, discussing aspects related to the evaluation of the economic-financial performance of agro-industrial cooperatives. In the third section, the methodological procedures adopted in this research are described. The fourth section presents the analyses and results obtained. Finally, the fifth section contains the final considerations of the study.

2. THEORETICAL FOUNDATION

2.1 Working Capital of Agro-Industrial Cooperatives

For Assaf Neto & Silva (2012), working capital management is closely related to purchasing and selling decisions, as well as a company's operational and financial activities. According to the authors, working capital comprises the resources invested in the company's current capital, which in turn are necessary to maintain the entire operational cycle of the organization.

The term "giro" refers to a company's current (short-term) resources, generally identified as those capable of being converted into cash within a maximum period of one year (ASSAF NETO & SILVA, 2012). Therefore, working capital management concerns the management of the accounts of current elements, that is, current assets and liabilities, and the interrelationships between them.

If working capital is related to elements dealing with current assets and liabilities, it is evident that they directly relate to the company's short-term financial resource demand. This need indicates the amount of money the company needs to honor its commitments within the agreed deadlines.

Thus, it can be stated that time is an important conditioning factor regarding working capital management. It should be noted that the major challenge for the financial manager is to adjust the temporal synchronization as efficiently as possible, that is, to align payment dates with the receipt dates of their operations (ASSAF NETO & SILVA, 2012). Addressing the topic, Augustini (1999, p. 23) emphasizes:

The dominant characteristic of the resources that make up working capital is the short period of time in which these same resources are transformed into other assets. In other words, inventories are transformed into accounts receivable, which in turn are transformed into available funds used to purchase raw materials, and so on.

Thus, it is up to the financial manager to reduce the temporal discrepancies between payments and receipts, optimizing the company's operations. According to Assaf Neto and Silva (2012, p. 3):

Because production, sales, and collection activities are not synchronized with each other, it is necessary to have

integrated knowledge of their developments as a way to more appropriately size the investment required in working capital and effectively control it.

Working capital needs are defined according to the particularities of each business and a series of market variables, as Assaf Neto and Silva (2012, p. 2) point out:

The importance and volume of working capital for a company are determined mainly by the volume of sales, which is supported by inventories, accounts receivable, and cash; business seasonality, which determines variations in resource needs over time; cyclical economic factors, such as recession, market behavior, etc.; technology, mainly applied to production costs and time; and business policies, focused on sales conditions, credit, production, etc.

The traditional parameter for measuring the availability of current capital is Working Capital (CDG) or Net Working Capital (CGL), obtained through the difference between current assets and current liabilities.

From this perspective, CDG represents the company's financial margin to settle its short-term commitments. Therefore, the higher this indicator, the better the liquidity condition and the lower the company's risk of insolvency, demonstrating that the company has sufficient resources for its short-term needs.

In addition, CDG can be used to evaluate the efficiency of a company's capital management. If this indicator increases over time, it may signal that the company is managing its capital effectively. For this reason, CDG is an important financial indicator that should be closely monitored by financial managers.

However, this parameter may overestimate the working capital value, resulting in an allocation greater than necessary to meet the organization's short-term financial resource demands. Considering that financial resources are limited in the business context, excessive availability of working capital can compromise the company's profitability and harm strategic planning, as resources that could be directed to investments in other areas of the organization become unavailable.

In parallel with the concept and calculation of CDG, it is essential for the financial manager to also understand the dynamics of a company's operations, that is, buying, producing, selling, and receiving. This circular movement of operations represents the conceptual basis of a company's operational, economic, and financial cycles, defined, according to Ramos (2011), Sá (2014), Fleuriot, Kehdy, and Blanc (2003), Ross, Westerfield, and Jaffe (2002), and Padoveze (2012), as:

operational cycle: consists of the period from the date of purchasing the goods to the date of receiving payment for their sale, and the shorter this operational cycle, the better for the company, which will not need to use working capital to organize and settle its financial activities.

economic cycle: consists of the time the goods remain in the company. This time spans from the purchase to the sale of the goods, and this gives us the inventory turnover, which is how long the company keeps those goods in its inventory. The longer the period the goods remain in inventory, the slower the inventory turnover, which can lead the company to seek third-party resources to finance its operational activities, as it will have insufficient cash, compromising its liquidity.

financial cycle: in turn, is the period it takes the company to receive from customers and to pay suppliers, and the shorter the collection period and the longer the payment period, the better for the company to have balance in its cycle.

These cycles and the relationships between them can be seen in Figure 1 below:



Figure 1: Operational, Economic and Financial Cycle Flows

It can be observed that the operational cycle encompasses both the economic and financial cycles, and financial resources are invested without the occurrence of cash inflows related to sales, which happen later, that is, at the end of the operational cycle.

The financial cycle, on the other hand, is the period during which the company needs to finance its activities; therefore, the longer the company's FC, the more working capital it will require, including cash reserves to meet its short-term obligations (REIS & SANTOS, 2017).

From the above, it is evident that it is important to understand the operational, economic, and financial cycle of a company, because through its calculation and information such as cash flow, receipts, payments, inventories, among others, the manager will have a broad view of their management and their actual working capital needs.

It should be emphasized that the calculation of the operational, economic, and financial cycles can be obtained through the formulas detailed by Ross, Westerfield, and Jaffe (2002, p. 603), Silva (2010, p. 249), and Borges, Carneiro, and Ribeiro (2011), among others, using the following formulas:

$$\text{Ciclo Operacional(CO)} = \text{PME} + \text{PMRV} \quad (2)$$

$$\text{Economic-Cycle-(CE)} = \text{PME} \quad (3)$$

$$\text{Financial-Cycle-(CF)} = \text{CO} - \text{PMP} \quad (4)$$

where:

PME - Average Inventory Period

PMRV - Average Collection Period for Sales

PMP - Average Payment Period

In turn, the Average Inventory Period (PME), Average Collection Period for Sales (PMRV), and Average Payment Period (PMP) are calculated as follows:

$$\text{PME} = 360 / (\text{CPV} / \text{Valor Medio dos Estoques}) \quad (5)$$

$$\text{PMRV} = 360 / (\text{Vendas} / \text{Valor Medio das Contas a Receber}) \quad (6)$$

$$\text{PMP} = 360 / (\text{CPV} / \text{Valor Medio de Fornecedores}) \quad (7)$$

where:

CPV = Cost of Goods Sold

According to Borges, Carneiro, and Ribeiro (2011), it is essential for companies to initially understand their average periods and then proceed to calculate their operational, economic, and financial cycles, considering that optimizing the cash cycle is desirable. Additionally, it should be noted that the data needed to calculate the Average Inventory Period (PME), Average Collection Period for Sales (PMRV), and Average Payment Period (PMP) can be obtained from the company's Balance Sheet (BS) and Income Statement (IS).

2.2 Dynamic Model

The Dynamic Working Capital Calculation Model emerged in the late 1970s as a proposal tailored to the reality of the Brazilian economy. It was developed by French professor Michel Fleuriet, who came to Brazil as a result of a partnership between the Dom Cabral Foundation in Belo Horizonte (MG) and France's Centre d'Enseignement Supérieur des Affaires (CESA). The two institutions sought to adjust and create their own management methods and processes, rooted in the reality of their countries, rather than importing technologies foreign to their specificities.

According to the official website of the Dynamic Model, which presents Professor Fleuriet's work in Brazil, citing the Brazilian Institute of Financial Executives, it highlights on its main page:

The Fleuriet Model is a different perspective on a company's financial statements. Created in 1978 by French professor Michel Fleuriet, this model is not only an approach to analyzing a company's economic and financial performance but also a smart way to manage a company with a focus on short- and long-term financial and economic sustainability (MODELO FLEURIET, 2023).

Professor Fleuriet, while teaching classes for Brazilian executives, observed that companies in Brazil had a mistaken conception regarding their working capital. It was erroneously believed that working capital financing could be sustained by short-term debts. However, considering the reality of the Brazilian economy, characterized by restricted access to credit and high interest rates, which compromises liquidity in the business environment, the idea of using short-term debts to finance working capital proves to be inadequate.

It is noteworthy that, during that period, the approach to corporate finance was widely influenced by American methods, in which working capital was incorrectly measured for the Brazilian reality. The adopted calculation was based on the difference between current assets and current liabilities, resulting in an inadequate assessment of the financial situation.

The Dynamic Model, proposed by French professor Fleuriet, reformulated the traditional logic of the working capital (WC) concept, which comes to be considered a long-term financing source to meet the company's working capital needs. From this perspective, by providing a more dynamic view of the balance sheet accounts, Fleuriet proposed a reclassification of the Balance Sheet accounts, taking into account their relationship with business operations. The new classification distinguishes items as operational or cyclical, i.e., directly related to the company's activities, and financial or erratic, which have no connection with the operational cycle. This division allows for a more precise analysis of the organization's financial balance (Fleuriet, Kehdy and Blanc, 2003).

According to the Dynamic Model, operational current assets refer to the investment derived from the company's operational activities, such as purchasing, production, storage, and sale of products. In contrast, operational current liabilities, also called operating liabilities, correspond to obligations arising from operational activities. Erratic current assets include financial accounts, such as cash on hand and short-term investments, while erratic current liabilities include financing sources represented by bank loans, bill discounting, and other operations that have no direct relationship with the company's operational cycle (MODELO FLEURIET, 2023).

Table 1: Reclassification of Balance Sheet Accounts

BALANCE SHEET					
Assets			Liabilities		
Current Assets	Financial or Erratic Accounts	Cash on Hand	Discounted Bills	Financial or Erratic Accounts	corerousness
		Bank Transaction Account	Short-Term Bank Loans		
		Short-Term Financial Investments	Dividends Payable		
		Income Tax Recoverable	Income Tax Payable		
	Cyclical or Operational Accounts	Accounts Receivable	Raw Material Suppliers	Cyclical or Operational Accounts	
		Finished Goods Inventory	Salaries Payable		
		Work-in-Progress Inventory	Transaction Taxes Payable		
		Raw Material Inventory			
	Prepaid Expenses	Customer Advances			
25:55:0.025	Non-Cyclical Accounts	Long-Term Receivables	Long-Term Payables	Non-Cyclical Accounts	Non-Current Liabilities
		Investments	Long-Term Loans and Financing		
		Fixed Assets	Shareholders' Equity		
		Intangible Assets	Share Capital		
			Reserves		
			Accumulated Profits or Losses		

Based on this reclassification of the Balance Sheet proposed by Fleuriet, the three components of the dynamic analysis of working capital are defined: Working Capital Requirement (WCR), Working Capital (WC), and Cash Balance (CB). The WCR can be obtained by the difference between the value of the cyclical accounts of assets and the cyclical accounts of liabilities (MODRO; FAMÁ & PEDROKAS, 2012).

$$\text{Working Capital Requirement/WCR} = \text{Sum of Cyclical Asset Accounts} - \text{Sum of Cyclical Liability Accounts}$$

The concept of Working Capital Requirement (WCR) for organizations and its relevance go beyond the simplistic definition of being the difference between operational current assets and operational current liabilities. As pointed out by Matarazzo (2010, p. 337), WCR constitutes a "fundamental concept for the financial analysis of the company", encompassing not only cash flow management but also directly influencing the organization's financing, growth, and profitability strategies.

The Working Capital Requirement (WCR) is an essential element for evaluating the financial situation of organizations. The value of WCR indicates the amount of resources needed to sustain the continuity of business operations. The analysis of the accounts that make up cyclical or operational assets and liabilities reveals that these are related to short-term operations, characterized by quick returns. This behavior differs substantially from the accounts of permanent assets, which result from long-term decisions and have a slower perspective of recovering the invested capital (OLINQUEVITCH & SANTI FILHO, 2009).

As for Working Capital (WC) in the Fleuriet Model, it is obtained through the difference between permanent liabilities and permanent assets, contrary to the traditional view, which defines WC as the difference between current assets and current liabilities.

$$\text{Working Capital/WC} = (\text{Equity} + \text{Long-Term Liabilities}) - (\text{Permanent Assets} + \text{Long-Term Receivables}) \quad (9)$$

According to Fleuriet; Kehdy, and Blanc (2003), when WC is negative, it means that short-term resources are financing non-current assets; when WC is positive, it shows that long-term resources, in addition to financing non-current assets, also finance current assets.

The third component of dynamic analysis is CB, which, according to Assaf Neto and Silva (2012), represents a company's financial reserve for potential expansions of the working capital requirement. CB is obtained through the difference between financial current assets and financial current liabilities, or through the difference between WC and WCR, demonstrating the company's margin of safety.

$$\text{Cash Balance/CB} = \text{Working Capital} - \text{Working Capital Requirement} \quad (10)$$

For Olinquevitch and Santi Filho (2009), a positive cash balance is a strong indicator of the company's financial balance. However, when the cash balance is negative, it indicates that the company is using short-term third-party capital to finance its activities, revealing financial difficulties.

According to Marques and Braga (1995), regarding the analysis of the three aggregates (WC, WCR, and CB), their combination, according to the sign presented by each, produces six different "financial profiles", which allows analyzing the situation of companies, as shown in Table 2 below:

Table 2: Financial profiles of the Fleuriet model analysis

Type I	Financial Profile	CDG	NCG	ST
I	Excellent	+	-	+
II	Solid	+	+	+
III	Unsatisfactory	+	-	-
IV	High Risk	-	-	+
V	Very Poor	-	-	-
VI	Terrible	-	+	-

Type I profile: the financial situation is excellent, with a high level of liquidity, since the positive ST represents a cash reserve. Type II profile: a solid profile with positive NCG, which differentiates it from Type I; even so, the CDG can finance the NCG, i.e., it is sufficient, and there is still a surplus of resources. Type III profile: unsatisfactory situation, where the CDG finances only part of the NCG ($CDG < NCG$), and the difference needs to be financed with short-term resources. Type IV profile: high risk, as the CDG would be investing short-term resources and still not proving profitable. Type V profile: very poor, financing its non-current assets with

short-term loans and negative NCG. Type VI profile: very poor financial situation, related to difficulty in meeting obligations, as short-term resources finance the NCG and permanent assets (REIS & SANTOS, 2017; SOUZA et al., 2017).

2.3 Scissors Effect

According to Fleuriet, Kehdy, and Blanc (2003), the scissors effect occurs when a company finances most of its NCG with short-term resources.

This happens when a company significantly expands its level of operations and sales without adequate resource support to finance the resulting increase in working capital needs MARQUES & BRAGA (1995). In this situation, expansion leads to an increase in working capital needs, which typically grows at a higher rate than the increase in working capital, forcing the company to resort to more costly short-term financing sources (MODRO; FAMÁ & PETROKAS, 2012).

In such cases, the company will be operating beyond its own financing capacity, which, depending on the level of debt generated, can squeeze profit margins and make the economic activity unviable.

For Assaf Neto and Silva (2012), other factors that can lead to the scissors effect include inflation, ambitious and oversized expansion targets, reduced working capital, accelerated fixed asset policies, etc.

The term "Scissors Effect" arises from the fact that, when visualized in a graph, the process causing the divergence of the NCG (operational applications) and CDG (long-term sources) curves produces a visual effect similar to that of the two parts of a pair of scissors. This open space between the two blades of the imaginary scissors represents the share of short-term financial resources contained in the Treasury Balance (T) used to finance the operational resource demand (NCG).

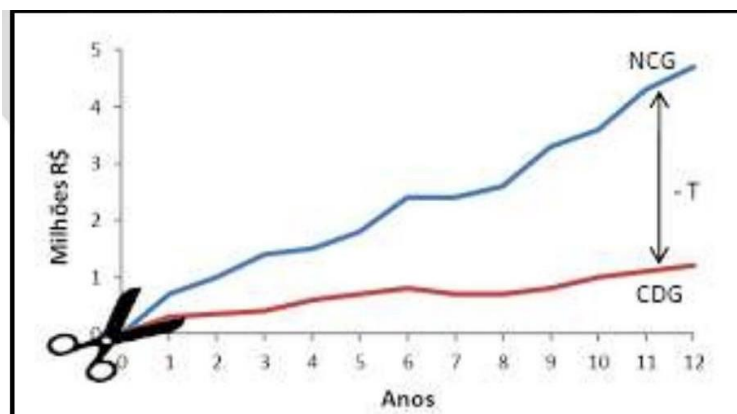


Figure 2: Graphical Representation of the Scissor Effect

In practice, what is observed is that incoming cash flows are smaller than outgoing cash flows, and the company's available resources will decrease, affecting its solvency and working capital, which can lead to future financial problems.

In this case, among the existing measures that can be taken to correct or prevent the emergence of the "Scissors Effect", the following stand out:

Examine the causes of the evolution of working capital needs and working capital (OLINQUEVITCH & SANTI FILHO, 2009);

Plan the evolution of the treasury balance (MODRO; FAMÁ & PETROKAS, 2012); and,

Have sufficient resources (self-financing) to finance increases in working capital needs (FLEURIET, KEHDY & BLANC, 2003).

2.4 Financial Situation Thermometer

Another indicator that can be analyzed in the Fleuriet Model is the Financial Situation Thermometer (FST), or Liquidity Thermometer (LT). Its purpose is to highlight the degree of participation of short-term third-party resources in financing the company's working capital needs. From it, one can perceive the magnitude of the negative cash balance in relation to working capital needs and, mainly, its trend over time, since the continuation of this type of financing can lead to a situation of complete financial imbalance. (VERAS MACHADO, MACHADO & MEDEIROS, 2008, p. 70). The FST is calculated by the following equation:

$$TSF = |T|/NCG \quad (11)$$

A positive cash balance indicates a financial surplus; in contrast, a negative balance indicates that the company is using third-party capital, generally costly, to finance its short-term activities, thus characterizing a financial exposure. For Fleuriet; Kehdy & Blanc (2003), the liquidity thermometer demonstrates the magnitude of the negative cash balance in relation to working capital and its trend over time, and, depending on the signs of the two indicators involved, shows the participation of short-term third-party capital that finances working capital.

3. METHODOLOGY

The study is descriptive and exploratory in nature, with a quantitative approach. According to Oliveira (2002), descriptive research aims to observe, record, and analyze phenomena without interfering in events. Gil (2002), on the other hand, emphasizes that exploratory research seeks to deepen the understanding of the problem, making it clearer and more explicit. The quantitative approach was used because the data used underwent analysis through an accounting technique and arithmetic calculations.

In the exploratory stage of the research, a bibliographic analysis, or analysis of secondary sources, was used through books, periodicals, and articles published on the investigated topic. In the descriptive stage, documentary research of primary sources was used through the consolidated financial statements, Balance Sheet (BS) and Income Statement, for the 2018-2022 period. The consolidated balance sheets were obtained from the website of the company selected for the research, COMIGO - Cooperativa Agroindustrial dos Produtores Rurais do Sudoeste Goiano (Agroindustrial Cooperative of Rural Producers of the Southwest Goiás), in the Balance Report section.

The Agroindustrial Cooperative of Rural Producers of the Southwest was founded on July 6, 1975, in the municipality of Rio Verde, in the state of Goiás. It currently has 10,485 cooperative members, 2,266 employees, and an annual turnover of R\$ 15.6 billion (COMIGO, 2022). The administrative headquarters and industrial complex are located in Rio Verde; however, the cooperative operates in 17 other municipalities with agricultural stores, mineral supplement production, and storage units (COMIGO, 2022). The cooperative holds a prominent position in Brazilian agribusiness, ranking 1st in sector performance in the North and Central-West regions and 2th in Agribusiness sector performance in Brazil. Overall, the cooperative is the 7th largest company among the top 50 in the North and Central-West regions, in the general classification, and the 115th largest company among the top 1000 in Brazil (VALOR ECONÔMICO, 2021).

Based on the financial statements of the COMIGO cooperative for the 2018-2022 period, the following steps were developed:

- 1) standardization of financial statements;
- 2) reclassification of equity accounts;
- 3) calculation of the dynamic variables of the Fleuriet model;
- 4) diagnostics, analysis, and discussion of the results.

In interpreting the data, considered by Marconi and Lakatos (2002) the central core of the research, Excel 2016 software was used to tabulate the data extracted from the consolidated balance sheets, aiming to facilitate calculations and methodological procedures.

The data were tabulated, analyzed, and interpreted, seeking to diagnose the working capital situation of the researched company in the light of the dynamics of the company's working capital analysis, aiming to find explanations for the results found.

4. RESULTS AND DISCUSSIONS

The working capital analysis was conducted based on data extracted from the consolidated financial statements of Cooperativa COMIGO, using for this purpose the calculation of the variables of the Fleuriet Dynamic Model. It should be noted that, due to space limitations, the cooperative's consolidated financial statements are not presented in this work. However, the Balance Sheet and the Income Statement can be consulted directly on the cooperative's website, in the "Cooperativa COMIGO" - "Balance Report" section.

The dynamic model for calculating working capital begins with the reorganization of the balance sheet accounts proposed by Fleuriet, aiming to extract the values of the NCG, CDG, and ST indices. Table 1 below presents the balance of Current Assets, Floating Assets, Operating Assets, Current Liabilities, Floating Liabilities, and Operating Liabilities of COMIGO for the research period.

Table 1: Assets and Liabilities of COMIGO - 2018/2023 (Values in Millions/R\$)

Balance Sheet					
Index	2018	2019	2020	2021	2022
Current Assets	1.533,63	1.891,80	2.569,89	3.581,73	5.100,64
Floating Assets	689,19	832,40	1.033,45	1.253,08	1.997,30
Operating Assets	844,44	1.059,40	1.536,44	2.328,65	3.103,34
Current Liabilities	591,55	939,12	1.049,40	1.531,26	2.186,97
Floating Liabilities	275,49	535,62	603,26	515,04	516,04
Operating Liabilities	316,06	403,50	446,14	1.016,22	1.670,93

Based on the values of COMIGO's Floating Assets, Operating Assets, Floating Liabilities, and Operating Liabilities, the NCG, CDG, and ST (adjusted values) ratios were calculated as per Table 2 below:

Table 2: COMIGO Dynamic Model Ratios - 2018/2023 (Values in Millions/BRL)

Index	2018	2019	2020	2021	2022
NCG	528,38	655,89	1.090,29	1.312,43	1.432,41
CDG	942,08	952,67	1.520,48	2.050,47	2.913,67
ST	413,70	296,78	430,19	738,04	1.481,26

Source: Calculated by the author.

Analyzing the calculated values, it is observed that the Working Capital Requirement registered an average annual growth of 28.34% between the years 2018 and 2022, while the increase in Net Operating Revenue for the same period showed an average growth of 38.28%, as evidenced in Table 3.

This behavior indicates a more significant increase in revenue compared to the working capital requirement. It is important to emphasize that, to ensure the organization's financial health, the Working Capital Requirement must grow in line with the increase in Net Operating Revenue. Furthermore, a company's level of activity is directly related to sales, and excessive growth in these sales requires a proportional increase in the Working Capital Requirement, even in the absence of significant changes in the financial cycle.

When this occurs, it leads the company to finance most of the WCR through short-term loans. In this case, the cash balance (T) becomes increasingly negative and growing, proportionally more so than the WCR. This imbalance leads to a disequilibrium in the organization's short-term financial resources if there is no organizational strategy to reverse the situation. This phenomenon is the so-called Scissors Effect that we highlighted in section 2.3 of this research.

Table 3: NOP/Sales Comigo (Values in Millions/BRL)

Year	Net Operating Revenue Inflow
2018	4.189,21
2019	4.453,34
2020	6.709,52
2021	9.993,23
2022	15.316,52

However, in turn, Working Capital showed an average increase of 32.61% during the 2018-2022 period. A value higher than the Working Capital Requirement, which was 28.34%, and lower than the growth of Net Operating Revenue, which was 38.28%. It should be emphasized that to preserve the company's short-term financial health, Working Capital must keep pace with the Working Capital Requirement, otherwise the company will face the Scissors Effect. In the case under analysis, although the growth of Working Capital was lower than the increase in Net Operating Revenue, its value was higher than the Working Capital Requirement, demonstrating safe management of the company's short-term resources during the research period.

As for the Treasury Balance, it shows a positive result with an average annual growth of 37.53% during the 2018-2022 period. This value was higher than the growth of Working Capital and the Working Capital Requirement, revealing an ability to meet short-term obligations and demonstrating favorable liquidity.

However, a positive and high Treasury Balance does not necessarily mean a desirable condition for companies; on the contrary, it may indicate that the company is not taking advantage of investment opportunities offered by its financial structure, in which case the Treasury Balance "grows" due to a lack of a dynamic investment strategy. It should also be noted that the behavior of the Treasury Balance is determined by the result of the confrontation between the available long-term sources of Working Capital and the operational resource needs of the Working Capital Requirement.

Finally, the Financial Situation Thermometer, despite fluctuating during the research period, has shown increasing values in the last three years, with a very significant value in 2022, demonstrating that the institution has financial reserves to cope with occasional expansions of the Working Capital Requirement. At this point, temporary working capital investment needs, when not covered by long-term financing, can be sustained by the existing balance limit (PADOVEZE; BENEDICTO, 2010).

Table 4: Financial Situation Thermometer of Comigo (2018-2022)

Year	TSF
2018	0,78
2019	0,45
2020	0,39
2021	0,56
2022	1,03

In general, the observed values of the working capital indices of the COMIGO cooperative using the Dynamic Approach during the analysis period, 2018-2022, show a TYPE 1 financial structure, that is, a solid financial profile, in which NCG, CDG, and ST behaved positively over the five years of the research, with CDG exceeding NCG.

It is concluded that the cooperative has sufficient working capital to finance its operational cycle needs and still has a cash surplus, demonstrating balanced working capital management, despite the small reduction in cash balance in 2019.

5. FINAL CONSIDERATIONS

The main objective of this research was to analyze working capital indicators from the perspective of Fleuriet's Dynamic Model, using an agro-industrial cooperative as an example for the period 2018-2022.

The results of the dynamic analysis of Fleuriet's Model for the COMIGO cooperative show satisfactory balance in the management of short-term financial resources. Through the calculation of the NCG, CDG, ST, and TSF indices, it is found that throughout the research period, working capital resources were sufficient to cover the growth of its sales, with CDG growing above NCG, demonstrating the use of long-term resources to meet the organization's short-term resource needs.

ST had an average growth above NCG and showed positive values throughout the research period, which demonstrates the company's ability to honor its short-term commitments and favorable liquidity.

TSF has shown positive evolution, despite some fluctuations observed during the research period; in the last three years, TSF has presented very significant values.

It is concluded that due to the ease of calculating and analyzing the indices derived from NCG, CGL, ST, and TSF, the research demonstrates that it can contribute to other organizations in various segments, although the results found require further reflection and, while generalizations cannot be made, the findings can be used as a guide regarding the importance of correct working capital management aligned with organizational strategies.

Finally, by demonstrating an effective tool for analyzing and calculating working capital, it is hoped that the research can show society, financial managers, and companies in general the importance of analysis focused on the

Fleuriet Model for managing an organization's short-term resources, in addition to serving as a database and research for future work on the topic.

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