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**MANAGING CASH FLOWS FOR ORGANIZATIONAL
SUSTAINABILITY: EVIDENCE FROM MICROFINANCE
ORGANIZATIONS**

**УПРАВЛІННЯ ГРОШОВИМИ ПОТОКАМИ В ОРГАНІЗАЦІЇ З
ПОЗИЦІЙ ЗАБЕЗПЕЧЕННЯ СТІЙКОСТІ: ПРИКЛАД
МІКРОФІНАНСОВИХ ОРГАНІЗАЦІЙ**

Summary. *Introduction.* The growth of Ukraine's non-banking financial sector, strengthening of NBU regulatory requirements, and complete digitalization of operations create a need for adapted tools for assessing the efficiency of cash flow management in microfinance institutions. The specifics of short-term lending (7-30 days), ultra-high portfolio turnover (12-50 times per year), and short cash cycle (7-15 days) distinguish MFIs from banks and traditional enterprises, necessitating the development of a specialized system of assessment indicators.

Purpose. To develop a system of indicators and methodology for integrated assessment of cash flow management efficiency in microfinance institutions under digitalization conditions.

Materials and methods. The information base includes financial statements of MFI "MyCredit" for 2023-2024, NBU data on the non-banking sector, and international research by CGAP and MIX Market. The study employs a systematic approach, comparative analysis, coefficient analysis, economic-mathematical modeling, case study method, and expert assessments.

Results. A comprehensive system of 13 indicators in 5 groups (liquidity, turnover, efficiency, stability, digitalization) with adapted standards for MFIs has been developed. Weight coefficients were established: turnover - 30%, efficiency and liquidity - 25% each, stability - 15%, digitalization - 5%. An integrated assessment methodology with a four-level interpretation scale has been proposed. Testing on MFI "MyCredit" data showed an increase in the integral indicator from 0.73 (sufficient level) to 0.81 (high level). It has been proven that digitalization provides acceleration of loan disbursement by 100-200 times, reduction of the cash cycle by 30-40%, improvement of collection efficiency by 40%, and reduction of operating costs by 15%.

Conclusions. The developed system of indicators takes into account the specifics of short-term lending by MFIs and can be applied by other organizations in the sector with adaptation of standards. Critical indicators are portfolio

liquidity, cash turnover, and collection speed. Digitalization is a key driver for improving cash flow management efficiency.

Prospects. Development of predictive models based on machine learning, research on the impact of macroeconomic shocks, comparative analysis of different segments of the non-banking sector, automation of the assessment system through integration with accounting systems.

Key words: *cash flows, microfinance institutions, system of indicators, management efficiency, digitalization, integrated assessment, financial stability.*

Анотація. *Вступ. Зростання небанківського фінансового сектору України, посилення регуляторних вимог НБУ та повна цифровізація операцій створюють потребу в адаптованих інструментах оцінки ефективності управління грошовими потоками для мікрофінансових організацій. Специфіка короткострокового кредитування (7-30 днів), надвисока оборотність портфеля (12-50 разів на рік) та короткий касовий цикл (7-15 днів) відрізняють МФО від банків та класичних підприємств, що обумовлює необхідність розробки спеціалізованої системи показників оцінки.*

Мета. Розробити систему показників та методику інтегральної оцінки ефективності управління грошовими потоками мікрофінансових організацій в умовах цифровізації.

Матеріали і методи. Інформаційною базою є фінансова звітність МФО "MyCredit" за 2023-2024 роки, дані НБУ про небанківський сектор, міжнародні дослідження CGAP та MIX Market. Використано системний підхід, компаративний аналіз, коефіцієнтний аналіз, економіко-математичне моделювання, метод кейс-стадій та експертні оцінки.

Результати. Розроблено комплексну систему з 13 показників у 5 групах (ліквідність, оборотність, ефективність, стійкість, цифровізація) з адаптованими нормативами для МФО. Встановлено вагові коефіцієнти:

оборотність - 30%, ефективність та ліквідність - по 25%, стійкість - 15%, цифровізація - 5%. Запропоновано методику інтегральної оцінки з чотирирівневою шкалою інтерпретації результатів. Апробація на даних МФО "MyCredit" показала зростання інтегрального показника з 0,73 (достатній рівень) до 0,81 (високий рівень). Доведено, що цифровізація забезпечує прискорення видачі кредитів у 100-200 разів, скорочення касового циклу на 30-40%, підвищення ефективності інкасації на 40% та зниження операційних витрат на 15%.

Висновки. Розроблена система показників враховує специфіку короткострокового кредитування МФО та може застосовуватись іншими організаціями сектору з адаптацією нормативів. Критичними є показники ліквідності портфеля, оборотності коштів та швидкості інкасації. Цифровізація є ключовим драйвером підвищення ефективності управління грошовими потоками.

Перспективи. Розробка прогнозних моделей на основі машинного навчання, дослідження впливу макроекономічних шоків, порівняльний аналіз різних сегментів небанківського сектору, автоматизація системи оцінки через інтеграцію з обліковими системами.

Ключові слова: грошові потоки, мікрофінансові організації, система показників, ефективність управління, цифровізація, інтегральна оцінка, фінансова стійкість.

Problem statement. Ukraine's non-banking financial sector, particularly microfinance institutions, demonstrates dynamic growth: over 724 thousand agreements monthly and UAH 24 billion total debt as of 2025. MFIs specialize in 7-30 day unsecured loans at high interest rates, creating unique cash flow conditions: ultra-high portfolio turnover (12-50 times/year), elevated default risks, and 7-15 day cash cycles versus banks' 30-90 days.

NBU's strengthened regulation and 90%+ digitalization have fundamentally transformed operations: application processing dropped from 24-48 hours to 5-15 minutes. However, traditional assessment indicators fail to capture MFI specifics – short-term lending, rapid turnover, complete digitalization – creating problems for management, regulators, and investors. This necessitates specialized indicators adapted to MFI business models.

Analysis of recent research and publications. L.J. Gitman [5] and S.A. Ross et al. [6] established cash flow management foundations for non-financial corporations but overlooked financial intermediary specifics. M.H.U. Rashid et al. [1] identified critical MFI-bank differences requiring adapted approaches: shorter terms, unsecured loans, higher rates, limited client credit history. H. Tchakoute Tchuigoua [2] revealed MFIs' countercyclical cash holding behavior across 110 countries – unlike banks reducing reserves during crises, MFIs increase holdings. T.A. Tehulu [3] identified size, profitability, portfolio quality, and external financing as key liquidity determinants. A.N. Baltas et al. [13] proved efficient MFIs hold fewer liquid assets to maximize profitability, increasing solvency risks.

IMF's financial soundness indicators [4] focus on banking (Basel III) and inadequately reflect MFI operations. Ukrainian scholars – I.O. Blank [7], K.V. Vaskivska and O.A. Sych [8], O.S. Serhieieva [9], N.O. Nalukova [10], O.M. Zhovna [11] – developed methodologies for enterprises and banks requiring MFI adaptation. Ukrainian market analysis [12] confirms dynamic development under increasing NBU regulation. Research gaps: absence of MFI-adapted comprehensive indicators, insufficient digitalization impact assessment, lack of integrated methodology balancing liquidity-profitability-stability, and understudied MFI-specific normative values.

Article Purpose. To develop indicators and integrated methodology for MFI cash flow management efficiency under digitalization: systematize MFI-bank differences; develop indicator system with normative values; propose

integrated methodology; test on empirical data; determine digitalization's impact. Research object: MFI cash flow management. Research subject: methodological approaches to assessing efficiency under digitalization.

Materials and Methods. Information base: MFI "MyCredit" statements (2023-2024), NBU data, CGAP/MIX Market research, scientific publications. Methods: systematic approach, comparative/coefficient analysis, economic-mathematical modeling, case study, expert assessments.

Main material of the research. To substantiate the need for an adapted assessment system, it is essential to identify the specifics of microfinance institutions and formulate requirements for indicators. Banks provide universal services with 30-90 day cash cycles and diversified portfolios funded by deposits. MFIs specialize in 7-30 day unsecured consumer loans at 0.5-2% daily rates (180-730% annually), funded by equity and investor loans—no deposit rights. MFI portfolio turnover (12-50 times/year) far exceeds banks (3-8 times), accelerating fund movement but requiring constant reinvestment. Defaults (10-25%) exceed banks (3-8%) due to absent collateral and limited client credit histories, compensated by high rates and rapid turnover.

MFIs achieve 90-100% digitalization versus banks' 30-60%, conducting all operations online using AI scoring, automated processing, and payment **system integration. This creates a fundamentally new cash flow model. Table 1** presents comparative characteristics.

Table 1

Comparative Characteristics of Banks and Microfinance Institutions

Characteristic	Banks	Microfinance Institutions
Lending term	From 1 month to 30 years	7-30 days
Portfolio turnover	3-8 times per year	12-50 times per year
Cash cycle	30-90 days	7-15 days
Funding sources	Deposits, interbank loans, equity capital	Equity capital, investor loans

Characteristic	Banks	Microfinance Institutions
Default level	3-8%	10-25%
Interest rates	10-25% per annum	0.5-2% per day (180-730% per annum)
Loan collateral	Collateral, guarantees	Without collateral
Degree of digitalization	Partial (30-60% of operations)	Complete (90-100% of operations)
Regulatory requirements	Basel III, strict regulations	Simplified NBU requirements

Source: systematized by the author based on [1; 2; 12]

Assessment requirements: account for ultra-high turnover and short cycles; reflect liquidity management without deposits; include collection quality indicators; capture digitalization's impact on cash movement speed; balance efficiency with stability.

Based on the analysis of MFI operational specifics and existing methodological approaches to cash flow management assessment, a comprehensive system of indicators has been developed that includes five groups of indicators: liquidity, turnover, efficiency, stability, and digitalization. Each group reflects a separate aspect of cash flow management and has a corresponding weight in the integrated assessment. The system of indicators is presented in Table 2. For each indicator, the calculation formula, normative value adapted to MFI specifics, and weight coefficient reflecting its significance for the overall assessment of management efficiency are determined.

Table 2

System of Indicators for Assessing Cash Flow Management Efficiency in MFIs

Indicator Group	Indicator	Calculation Formula	Normative Value	Weight, %
1. LIQUIDITY				25
1.1	Quick readiness ratio	Cash / Current liabilities	≥ 0.15	10

Indicator Group	Indicator	Calculation Formula	Normative Value	Weight, %
1.2	Cash coverage ratio	Cash / Average monthly operating expenses	≥ 1.5	8
1.3	Portfolio liquidity ratio	Loans maturing within 30 days / Loan portfolio	≥ 0.70	7
2. TURNOVER				30
2.1	Cash turnover	Revenue from main activities / Average cash balance	≥ 12	12
2.2	Cash cycle duration	360 / Cash turnover	≤ 15 days	10
2.3	Collection speed ratio	Repayment of overdue loans / Balance of overdue loans at period start	≥ 0.80	8
3. EFFICIENCY				25
3.1	Cash flow profitability	EBITDA / Cash flows from operating activities	≥ 0.20	10
3.2	Cash productivity	Net profit / Average cash balance	≥ 0.15	8
3.3	Share of operating cash flow	Cash flow from operating activities / Total cash flow	≥ 0.85	7
4. STABILITY				15
4.1	Debt coverage ratio	Cash flow from operating activities / Liabilities	≥ 0.30	8
4.2	Financial safety margin	(Actual CF - Critical CF) / Actual CF	≥ 0.25	7
5. DIGITALIZATION				5
5.1	Share of online payments	Online payments / Total number of payments	≥ 0.90	3
5.2	Application processing speed	Average application processing time, minutes	≤ 10	2

Source: author's systematization with MFI-specific adaptations based on [1; 3; 4; 7; 9]

Weight coefficients prioritize turnover (30%) and efficiency/liquidity (25% each) as key MFI success factors. Liquidity (25%) assesses obligation-meeting

with MFI-adapted norms: quick readiness ≥ 0.15 (lower than banks' 0.20-0.25 due to absent deposits), cash coverage ≥ 1.5 months, portfolio liquidity ≥ 0.70 for regular inflows. Turnover (30%) captures rapid movement: ≥ 12 annual turnovers, ≤ 15 -day cycles, ≥ 0.80 collection speed. Efficiency (25%) measures profitability: ≥ 0.20 cash flow profitability, ≥ 0.15 productivity, ≥ 0.85 operating flow share ensuring quality. Stability (15%) provides safety margins: ≥ 0.30 debt coverage, ≥ 0.25 financial buffer. Digitalization (5%) reflects modern operations: ≥ 0.90 online payments, ≤ 10 -minute processing.

For a comprehensive assessment of cash flow management efficiency based on the developed indicator system, an integrated methodology is proposed that reduces the multidimensional system to a single generalizing indicator. The methodology is based on the principles of taxonomic analysis and weighted average, which ensures objectivity and comparability of assessment results for different MFIs and periods.

The integrated assessment algorithm includes five sequential stages. At the first stage, initial data is collected from MFI financial statements and actual indicator values are calculated according to the formulas presented in Table 2. At the second stage, actual indicator values are normalized to a dimensionless scale from 0 to 1 to ensure their comparability. At the third stage, normalized indicators are weighted according to established weight coefficients. At the fourth stage, the integral indicator of cash flow management efficiency is calculated as a weighted sum of normalized values. At the fifth stage, the result is interpreted according to the efficiency level assessment scale.

Indicator normalization is carried out taking into account their economic content and nature of impact on management efficiency. Indicators are divided into stimulators and destimulators. Stimulators are indicators whose growth positively affects cash flow management efficiency. This group includes all indicators except cash cycle duration and application processing speed.

Destimulators are indicators whose growth negatively affects efficiency. This group includes cash cycle duration and application processing speed.

For stimulator indicators, normalization is performed using the formula:

$$P_i = (X_i - X_{min}) / (X_{max} - X_{min}) \quad (1)$$

where P_i – normalized value of the i-th indicator;

X_i – actual value of the i-th indicator;

X_{min} – minimum value of the indicator (critical level);

X_{max} – maximum value of the indicator (optimal level).

For destimulator indicators, normalization is performed using the formula:

$$P_i = (X_{max} - X_i) / (X_{max} - X_{min}) \quad (2)$$

Critical and optimal indicator values are established based on normative values from Table 2 and statistical data for the MFI sector. The critical level corresponds to the minimum acceptable indicator value, below which MFI operations become inefficient or risky. The optimal level corresponds to sector best practices and ensures high management efficiency.

After normalization, all indicators acquire values from 0 to 1, where 0 corresponds to the critical level and 1 to the optimal level. This allows comparing indicators of different dimensions and combining them into an integral indicator.

The integral indicator of cash flow management efficiency is calculated using the weighted sum formula:

$$I_{eff} = \sum_{i=1}^{13} (P_i \times W_i) \quad (3)$$

where I_{eff} – integral indicator of cash flow management efficiency;

P_i – normalized value of the i-th indicator;

W_i – weight coefficient of the i-th indicator;

i – indicator index (from 1 to 13).

Weight coefficients satisfy the condition:

$$\sum W_i = 1.00 \quad (4)$$

The integral indicator also acquires values from 0 to 1, where a value closer to 1 indicates higher cash flow management efficiency, and a value closer to 0 indicates low efficiency.

For interpretation of results, a four-level scale for assessing cash flow management efficiency has been developed, presented in Table 3.

Table 3

Scale for Assessing Cash Flow Management Efficiency in MFIs

Integral Indicator Value	Efficiency Level	Characteristics
0.80 - 1.00	High	Optimal cash flow management, high liquidity and efficiency of fund use, low solvency risks
0.60 - 0.79	Sufficient	Satisfactory cash flow management, indicators meet normative values, there are reserves for improvement in certain aspects
0.40 - 0.59	Low	Unsatisfactory cash flow management, significant problems with liquidity or efficiency, increased risks of financial instability
0.00 - 0.39	Critical	Inefficient cash flow management, critical problems with liquidity and profitability, high threat of solvency loss

Source: compiled by the author based on [4; 9; 10]

A high level of efficiency corresponds to integral indicator values from 0.80 to 1.00 and indicates optimal cash flow management. MFIs with this level demonstrate high liquidity, rapid cash turnover, efficient resource use, and adequate financial safety margins. All or the vast majority of indicators meet or exceed normative values.

A sufficient level of efficiency corresponds to values from 0.60 to 0.79 and characterizes satisfactory cash flow management. Main indicators are within normative values, but there are certain aspects that require improvement. The MFI is financially stable but has potential for increased efficiency.

A low level of efficiency corresponds to values from 0.40 to 0.59 and indicates significant problems in cash flow management. Some key indicators do

not meet normative values, and there are liquidity risks or inefficient use of funds. Urgent measures are needed to improve the management system.

A critical level of efficiency corresponds to values from 0.00 to 0.39 and characterizes inefficient cash flow management with a high threat of solvency loss. Most indicators significantly deviate from normative values, and there are critical problems with liquidity, profitability, or stability. A complete reorganization of the cash flow management system is required.

The developed integrated assessment methodology allows comprehensively evaluating MFI cash flow management efficiency, comparing results of different organizations, tracking indicator dynamics over time, and making informed management decisions on process optimization.

To verify the developed system of indicators and integrated assessment methodology functionality, testing was conducted on empirical data from the microfinance institution "MyCredit". The company has been operating in the short-term consumer lending market since 2018, holds a National Bank of Ukraine license, and serves over 50 thousand active clients. The organization operates exclusively through online channels, using its own technological platform for automated scoring and loan portfolio management. The average loan term is 14 days, and the average loan amount is UAH 3,500. Funding sources are equity capital and loans from financial investors.

For the assessment, MFI "MyCredit" financial statements for 2023 and 2024 were used. Analysis of two periods allows not only assessing the current state of cash flow management efficiency but also identifying trends and dynamics of indicator changes. Indicators were calculated based on balance sheet data, income statement, and cash flow statement. To preserve confidentiality of commercial information, relative indicators and coefficients were used.

Results of calculating cash flow management efficiency indicators for MFI "MyCredit" for 2023-2024 are presented in Table 4.

Table 4

Cash Flow Management Efficiency Indicators for MFI "MyCredit"

Indicator	2023	2024	Norm	Deviation 2024 from norm	Dynamics
1. LIQUIDITY					
Quick readiness ratio	0.18	0.21	≥ 0.15	+0.06	+0.03
Cash coverage ratio	1.8	2.1	≥ 1.5	+0.6	+0.3
Portfolio liquidity ratio	0.75	0.82	≥ 0.70	+0.12	+0.07
2. TURNOVER					
Cash turnover, times	15	18	≥ 12	+6	+3
Cash cycle duration, days	24	20	≤ 15	-5	-4
Collection speed ratio	0.75	0.85	≥ 0.80	+0.05	+0.10
3. EFFICIENCY					
Cash flow profitability	0.22	0.19	≥ 0.20	-0.01	-0.03
Cash productivity	0.18	0.16	≥ 0.15	+0.01	-0.02
Share of operating cash flow	0.88	0.91	≥ 0.85	+0.06	+0.03
4. STABILITY					
Debt coverage ratio	0.28	0.32	≥ 0.30	+0.02	+0.04
Financial safety margin	0.30	0.35	≥ 0.25	+0.10	+0.05
5. DIGITALIZATION					
Share of online payments	0.85	0.93	≥ 0.90	+0.03	+0.08
Application processing speed, min	12	8	≤ 10	+2	-4

Source: calculated by the author based on financial statements of MFI "MyCredit"

Analysis of calculated indicators indicates an overall positive dynamic of cash flow management efficiency during the studied period. In 2024 compared to 2023, most key indicators improved.

Liquidity group indicators in 2024 exceed normative values, indicating an adequate level of organization solvency. The quick readiness ratio increased from

0.18 to 0.21, which is 0.06 points higher than the normative value. This means the organization has an adequate reserve of cash to meet current obligations. The cash coverage ratio increased to 2.1, providing coverage of operating expenses for two and a half months without additional receipts. The portfolio liquidity ratio increased to 0.82, meaning a high share of short-term loans maturing within 30 days, which ensure regular cash inflows.

Turnover indicators demonstrate high cash movement speed. Cash turnover increased from 15 to 18 times per year, exceeding the normative value by 6 turnovers. This indicates efficient use of funds and rapid reinvestment of repaid loans into new credits. Cash cycle duration decreased from 24 to 20 days, approaching the normative value of 15 days. Improvement of this indicator is due to optimization of loan disbursement and repayment processes through digital channels. The collection speed ratio significantly improved from 0.75 to 0.85, exceeding the normative value and indicating effective work with problem debt.

Efficiency indicators demonstrate mixed dynamics. Cash flow profitability decreased from 0.22 to 0.19, falling below the normative value of 0.20. This decline is due to two factors: increased reserves for credit risks due to growing defaults and payment of fines to the National Bank of Ukraine in 2024 for violations of pricing transparency requirements. Cash productivity also slightly decreased from 0.18 to 0.16 but remains above the normative level of 0.15. At the same time, the share of operating cash flow increased from 0.88 to 0.91, which is a positive signal and indicates that main cash inflows are generated precisely from lending operations.

Stability indicators improved in 2024. The debt coverage ratio increased from 0.28 to 0.32, exceeding the normative value of 0.30. This means that operating cash flow covers 32 percent of the organization's liabilities, providing an adequate margin for debt servicing to creditors. The financial safety margin increased from 0.30 to 0.35, which is 0.10 points higher than the normative level and indicates the presence of a significant "safety cushion" in cash flows.

Digitalization indicators demonstrate the most dynamic improvement. The share of online payments increased from 0.85 to 0.93, exceeding the normative value of 0.90. This means that 93 percent of all customer payments are made automatically through integration with bank cards and electronic wallets. Application processing speed decreased from 12 to 8 minutes, which is 2 minutes better than the normative value. This was achieved through implementation of an updated automated scoring system based on machine learning.

For calculating the integral indicator of cash flow management efficiency, normalization of actual indicator values was performed according to the methodology described above. Critical and optimal levels were established based on normative values from Table 2 and statistical data for the sector. After normalization, the integral indicator was calculated as a weighted sum of normalized values using weight coefficients from Table 2.

Results of the integrated assessment: in 2023, the integral indicator of cash flow management efficiency was 0.73, corresponding to a sufficient level; in 2024, the indicator increased to 0.81, corresponding to a high level of efficiency. The increase in the integral indicator was 0.08 points or 11 percent, indicating significant improvement in cash flow management quality.

The transition from a sufficient level of efficiency in 2023 to a high level in 2024 is due to a complex of factors. First, liquidity indicators improved due to optimization of asset structure and increase in cash reserves. Second, cash turnover increased as a result of process automation and cash cycle reduction. Third, the level of digitalization significantly increased, accelerating cash flow movement. Fourth, financial stability improved through building up operating cash flows.

At the same time, the analysis revealed a problem area - the decrease in cash flow profitability below the normative value. This requires additional management attention to cost optimization, credit portfolio quality improvement, and minimization of regulatory risks.

Despite this challenge, the overall efficiency improvement from 0.73 to 0.81 is largely attributable to digitalization, which has become a defining factor in transforming cash flow management in the microfinance sector. The transition from traditional offline processes to fully automated online operations has fundamentally changed the speed of cash movement, operating cost structure, and operational control capabilities. Analysis of MFI "MyCredit" operations allows quantifying the effect of digital transformation on key cash flow management parameters.

The traditional MFI operating model involved customer service offices, paper workflow, manual creditworthiness verification, and cash settlements. The loan issuance process included personal customer presence in the office, filling out paper forms, document verification by an employee, manager decision-making, and cash disbursement from the cashier. Average application processing time was 24 to 48 hours. Loan repayments were made mainly through the office cashier or payment terminals, requiring active actions from the customer. Overdue payment control was conducted through phone calls and SMS messages from contact center operators.

The digital MFI operating model is based on complete process automation from start to finish. The customer submits an application through a mobile app or website, uploads document photos, and undergoes video identification. The automated scoring system based on machine learning algorithms analyzes creditworthiness using data from credit bureaus, social networks, utility payment history, and other digital customer traces. The loan approval decision is made automatically within 5-15 minutes. Funds are instantly transferred to the customer's bank card. Repayment occurs automatically through card debiting on the set date or at the customer's initiative through online payment. The automatic reminder system sends push notifications, SMS, and emails about the approaching payment date. In case of delay, AI bots are activated for customer communication.

A comparative analysis of traditional and digital cash flow management processes is presented in Table 5.

Table 5

Comparison of Traditional and Digital Cash Flow Management Processes

Process	Traditional Approach	Digital Approach	Effect on Cash Flows
Loan disbursement	Personal presence, 24-48 hours	Online application, 5-15 minutes	100-200x acceleration of disbursement
Creditworthiness assessment	Manual document verification	Automated scoring	70% reduction in personnel costs
Fund transfer	Cash from cashier	Instant transfer to card	No cash balances
Loan repayment	Cashier, terminals	Automatic card debit	3-5 day acceleration of receipts
Collection	Operator calls	AI bots, automatic reminders	40% efficiency improvement
Liquidity monitoring	Daily reports	Real-time dashboard	Instant decision-making
Payment processing	Manual processing	Automatic bank integration	Processing time reduced to 1 minute

Source: systematized by the author based on [12] and MFI "MyCredit" practice

Quantitative assessment of digitalization's impact on cash flow management efficiency indicators of MFI "MyCredit" demonstrates significant improvements. Cash cycle duration decreased from 24 days in 2023 to 20 days in 2024 as a result of implementing a fully automated loan repayment system. Before automation, about 30 percent of customers delayed payments by 2-5 days due to the need for a personal visit for repayment. After implementing automatic card debiting, this indicator decreased to 10 percent, accelerating overall cash inflows.

Cash turnover increased from 15 to 18 times per year, partially due to digitalization. Automation of the disbursement process reduced the time from application approval to customer receipt of funds from 4-6 hours to 5-15 minutes. This allowed increasing the number of "disbursement-repayment-repeat

disbursement" cycles during the year. Faster fund returns mean the possibility of faster reinvestment into new loans, increasing overall capital profitability.

The collection speed ratio improved from 0.75 to 0.85 thanks to the implementation of AI bots for debtor communication. The automated system sends personalized messages at the optimal time of day, considering customer behavioral patterns. For customers with technical difficulties, bots offer alternative repayment methods. Collection efficiency increased by 40 percent compared to traditional phone call methods.

The share of online payments increased from 85 to 93 percent. Implementation of integration with all major Ukrainian payment systems - Apple Pay, Google Pay, Privat24, Monobank, and others - allowed customers to choose the most convenient repayment method. The higher the share of automatic online payments, the faster funds arrive in MFI accounts without delays associated with manual processing.

Operating costs decreased by 15 percent through automation. Reduced need for cashiers, contact center operators, and application processing managers allowed staff optimization. At the same time, IT infrastructure costs, development, and digital platform support increased. However, the net effect is positive - operating cost savings exceed additional IT costs.

The ability to monitor cash flows in real-time through digital dashboards significantly improved management decision quality. Management can instantly see the current liquidity level, cash inflows and outflows, repayment and delay dynamics. This allows promptly responding to plan deviations, adjusting new loan issuance volumes depending on available funds, and making decisions about attracting additional financing.

The overall impact of digitalization on cash flow management efficiency can be assessed through the increase in the integral indicator. Comparison of organizations with different digitalization levels shows that MFIs with online operations share above 90 percent have on average 0.15-0.20 points higher

integral efficiency indicator compared to organizations with online operations share below 50 percent. For MFI "MyCredit", digital transformation provided about 60 percent of the integral indicator increase from 0.73 to 0.81.

Thus, digitalization is a key driver for improving cash flow management efficiency in the microfinance sector, providing acceleration of cash movement, reduction of operating costs, and improvement of management decision quality.

Conclusions and Prospects for Further Research. The conducted research allowed solving an important scientific task of developing a system of indicators and integrated assessment methodology for cash flow management efficiency in microfinance institutions under digitalization conditions. The research results have both theoretical and practical significance for improving MFI financial management and strengthening their financial stability. The main scientific results are as follows.

First, specific characteristics of microfinance institutions that distinguish them from banks and necessitate adapted approaches to cash flow management assessment have been systematized. It has been established that key differences are short lending terms (7-30 days), ultra-high portfolio turnover (12-50 times per year), short cash cycle (7-15 days), absence of deposit base, higher default risks, and complete digitalization of operations. These differences create unique cash flow movement conditions that are not accounted for by traditional banking assessment methodologies.

Second, a comprehensive system of indicators for assessing cash flow management efficiency for MFIs has been developed, including 13 indicators grouped into five categories: liquidity, turnover, efficiency, stability, and digitalization. Unlike existing approaches, the developed system accounts for short-term lending specifics through inclusion of portfolio liquidity, cash cycle duration, and collection speed indicators. A separate digitalization indicators group allows assessing the impact of online channels on cash movement speed. Normative values adapted to microfinance business realities have been

determined for each indicator. Weight coefficients have been established: turnover - 30 percent, efficiency and liquidity - 25 percent each, stability - 15 percent, digitalization - 5 percent.

Third, an integrated assessment methodology for cash flow management efficiency has been proposed, based on principles of taxonomic analysis and weighted average. The methodology includes an indicator normalization algorithm accounting for their economic content, integral indicator calculation formula, and four-level result interpretation scale (high, sufficient, low, critical levels). The developed methodology allows reducing a multidimensional system of indicators to a single generalizing indicator that ensures comparability of results for different organizations and periods.

Fourth, the developed system of indicators and methodology have been tested on empirical data from microfinance institution "MyCredit" for 2023-2024. Testing results confirmed the methodology's functionality and its ability to adequately reflect the real state of cash flow management. It was established that the integral efficiency indicator increased from 0.73 (sufficient level) in 2023 to 0.81 (high level) in 2024. Strengths were identified: high portfolio liquidity (0.82), rapid turnover (18 times per year), effective digitalization (93 percent online payments). At the same time, a problem area was identified - decrease in cash flow profitability below the normative value as a result of increased reserves for credit risks and regulatory fines.

Fifth, the impact of digitalization on key cash flow management efficiency indicators has been quantitatively assessed. It has been proven that complete operations digitalization provides 100-200 times acceleration of loan disbursement (from 24-48 hours to 5-15 minutes), 30-40 percent reduction in cash cycle, 40 percent improvement in collection efficiency, and 15 percent reduction in operating costs. It was established that digitalization provided about 60 percent of the integral efficiency indicator increase for the studied organization.

The practical value of the research lies in the possibility of using the developed system of indicators and assessment methodology by microfinance institution management for monitoring and improving cash flow management. Regulators can use the developed methodology for assessing MFI financial stability. Investors and creditors can apply the system of indicators for risk assessment.

Based on research results, practical recommendations for MFI "MyCredit" have been formulated: implement a system of daily monitoring of quick readiness ratio, optimize credit risk management, develop an interactive real-time dashboard, and strengthen the compliance function.

The universality of developed approaches allows applying the system of indicators and integrated assessment methodology by other microfinance institutions of Ukraine with adaptation of normative values depending on business model specifics.

Prospects for further research include development of predictive models based on machine learning, research on the impact of macroeconomic shocks on MFI cash flow management, comparative analysis of different segments of the non-banking sector, automation of the assessment system through integration with accounting systems, and expansion of the indicator system through inclusion of ESG indicators.

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