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KORISNOST CASH FLOW POKAZATELJA U KREDITNOJ ANALIZI: PRAKSA U SRBIJI

Rad je deo istraživačkih projekata pod šiframa 47009 - Evropske integracije i društveno-ekonomske promene prirede Srbije na putu ka EU i 179015 - Izazovi i perspektive strukturnih promena u Srbiji: Strateški pravci ekonomskog razvoja i usklađivanje sa zahtevima EU, finansiranih od strane Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije.

Rezime

Cilj rada je analiza zastupljenosti i korisnosti cash flow pokazatelja u postupku kreditne analize u Srbiji. Metodologija istraživanja obuhvata analizu sadržaja koja je primerena cilju istraživanja. Ključan doprinos rada čine empirijska istraživanja koja su zasnovana na naučnim anketama. Praksa kreditne analize u Srbiji je proučavana na osnovu primene finansijskih pokazatelja, koji su zasnovani na novčanim tokovima, u sistemu ocene kreditnog rejtinga privrednih korisnika bankarskih plasmana. Rezultati istraživanja pokazuju da se cash flow pokazatelji u manjoj meri primenjuju u oceni kreditnog rejtinga u odnosu na pokazatelje koji su zasnovani na pozicijama bilansa stanja i bilansa uspeha. Ipak, anketirani kreditni analitičari u Srbiji ocenama koje iznose potvrđuju korisnost cash flow informacija klijenata banke za donošenje odluka o kreditiranju. Pokazatelj likvidnosti zasnovan na novčanim tokovima, odabrani pokazatelji pokrića i cash flow marža beleže najveću zastupljenost i najviše ocene korisnosti primene u sistemu utvrđivanja kreditnog rejtinga privrednih klijenata banke među odabranim cash flow pokazateljima.

Ključne reči: cash flow pokazatelji, ocena korisnosti, kreditni analitičari, privredni korisnici kredita

JEL: G24, G32, L25

USEFULNESS OF CASH FLOW INDICATORS IN CREDIT ANALYSIS: CASE OF SERBIA

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Summary

The aim of this paper is to analyze the representation and usefulness of cash flow indicators in the credit analysis process in Serbia. The research methodology includes the content analysis taken for the research purpose. Key contributions of the paper are empirical research based on scientific surveys. The credit analysis practice in Serbia has been studied regarding the application of cash flow based financial indicators in the system of assessing the credit rating of the banks' business credit users. The research results indicate that cash flow-based indicators are less widely used in credit ratings compared to indicators based on balance sheet and income statement items. Nevertheless, surveyed credit analysts in Serbia confirm the usefulness of cash flow information of banks' clients for making credit decisions. Liquidity indicator based on cash flow, selected coverage indicators and cash flow margin record the highest representation and usefulness of the application in the credit rating system of business clients among selected cash flow indicators.

Keywords: cash flow indicators, assessment of usefulness, credit analysts, business credit users

JEL: G32, L25, G24

Uvod

Procena kreditne sposobnosti korisnika kredita podrazumeva prikupljanje finansijskih i nefinansijskih informacija korisnika, analizu prikupljenih informacija i donošenje odluke o odobravanju kredita. Kvalitet kreditne odluke i nivo kreditnog rizika zavise od finansijskih performansi preduzeća, ali i od organizacionih i faktora okruženja preduzeća. Primarni zadatak kreditnih analitičara jeste sagledavanje mogućnosti servisiranja obaveza po osnovu kredita prema ugovorenim rokovima dospeća, jer su kreditori zainteresovani za uspešnost naplate potraživanja po osnovu kreditnih plasmana od korisnika kredita u dogovorenim rokovima.

Banke mogu koristiti interne i eksterne sisteme kreditnog rejtinga za procenu kreditne sposobnosti korisnika kredita. Pored standardizovanog pristupa koji podrazumeva procenu kreditne sposobnosti korisnika kredita od strane eksterne rejting agencije, postoji i pristup zasnovan na internim sistemima rejtinga. U cilju dvostruke provere kreditne sposobnosti korisnika kredita, banke mogu da primenjuju i eksterne i interne sisteme kreditnog rejtinga.

Nezavisno od toga da li se kreditni rejting utvrđuje na osnovu internog i/ili eksternog sistema rejtinga, finansijski izveštaji korisnika kredita predstavljaju obavezan deo seta dokumentacije na osnovu koje se kreditni rejting ocenjuje. Kreditni analitičari banke u internom sistemu kreditnog rejtinga koriste postojeće i projektovane finansijske izveštaje klijenta. Finansijski analitičari eksternih rejting agencija svoj predlog ocene rejtinga daju na osnovu informacija iz finansijskih izveštaja i ostalih karakteristika preduzeća koje je predmet ocene kreditnog rejtinga. Finansijski pokazatelji utvrđeni na osnovu informacija iz finansijskih izveštaja predstavljaju relevantnu informacionu osnovu i za ocenu kreditnog rizika i kreditnog rejtinga korisnika kredita.

Sistemi kreditnog rejtinga se vremenom razvijaju, pri čemu je posebno značajan fokus na analizi profitabilnosti korisnika kredita i analizi rizika kojima su izloženi. Analiza stanja i tokova gotovine je ključna karakteristika svakog zahteva za kredit, kao i utvrđivanje

sposobnosti korisnika da generiše novčane tokove dovoljne za otplatu kredita. Konačna odluka kreditora o prihvatanju ili odbijanju zahteva klijenta, između ostalog zavisi i od iznosa poslovnog neto novčanog toka koji je raspoloživ za otplatu kredita. Poslovni neto novčani tok je poželjan kao izvor finansiranja jer ukoliko se znatan deo priliva ostvaruje po osnovu prodaje imovine ili novih zaduživanja, izloženost riziku potencijalnog kreditora je u porastu.

Cilj rada je analiza prakse kreditne analize u Srbiji sa aspekta primene i korisnosti finansijskih pokazatelja koji su zasnovani na novčanim tokovima. Proučavanje primene cash flow pokazatelja se odnosi na sistem ocene kreditnog rejtinga privrednih korisnika bankarskih plasmana. Metodologija istraživanja obuhvata analizu sadržaja i empirijska istraživanja koja su zasnovana na naučnim anketama.

U skladu sa ciljem istraživanja, pored uvoda i zaključka rad sadrži četiri dela. Nakon uvoda u prvom delu rada su opisane karakteristike sistema ocene kreditnog rejtinga. Drugi deo rada sadrži analizu uloge novčanih tokova u sistemu ocene kreditnog rejtinga. U trećem delu rada su definisani metodologija istraživanja i podaci, dok su u četvrtom delu prikazani i opisani rezultati istraživanja.

Sistem ocene kreditnog rejtinga

Ocena kreditne sposobnosti privrednih klijenata banke podrazumeva upoznavanje poslovanja preduzeća. Poznavanjem poslovnog ciklusa, okruženja i ostalih faktora poslovanja klijenta, kreditni analitičari mogu da kompletiraju sliku o mogućnostima servisiranja kredita i kreditnom riziku kome je banka izložena plasiranjem kredita konkretnom korisniku. Prikupljanjem i razumevanjem finansijskih i nefinansijskih informacija o poslovanju korisnika kreditnih plasmana, stiče se informaciona osnovu za donošenje krajnjih kreditnih odluka. Osnova za odobravanje kreditnih plasmana treba da bude sveobuhvatna, jer nijedna finansijska tehnika ne daje kompletnu finansijsku sliku preduzeća. Klasični način analize i odobravanja kredita podrazumeva primenu formalnih instrukcija, ali i subjektivno tumačene informacije od strane

Introduction

The creditworthiness assessment means collecting financial and nonfinancial credit users' information, analysis of the collected information and making a decision on the loan approval. The quality of the credit decision and the level of credit risk depend on the company's financial performance, together with the organizational and company's environmental factors. The primary task of credit analysts is to check the possibility of servicing loan commitments under agreed maturity terms because creditors are interested in the success of collecting credit claims from credit users within agreed deadlines.

Banks can use internal and external credit rating systems to assess the creditworthiness of the credit borrower. In addition to a standardized approach that implies the assessment of the clients' creditworthiness by an external rating agency, there is also an approach based on internal rating systems. In order to double the creditworthiness of credit users, banks can apply both external and internal credit rating systems.

Independently of whether the credit rating is determined on the basis of an internal and/or external rating system, the users' financial statements represent a mandatory part of the set of documentation on the basis of which the credit rating is assessed. Bank credit analysts use the existing and projected financial statements of a client. The financial analysts of the external rating agencies submit their rating assessments based on information from the financial statements and other characteristics of the company subject of the credit rating assessment. The financial indicators measured using the information from financial statements represent the relevant information base for assessing the credit risks and the borrower's credit rating.

Credit rating systems are evolving over time, with a particular focus on the analysis of the profitability of credit users and the risk analysis they are exposed to. Status and cash flow analysis is a key feature of each loan requirement, as well as the determination of the customer's ability to generate sufficient cash flows to repay the loan. The final decision of

the creditor to accept or reject a client's request shall, *inter alia*, depend on the amount of net operating cash flow available for repayment of the loan. Net operating cash flow is desirable as a source of financing. If a significant portion of the cash inflow is realized on assets sale or new borrowing, the potential creditor risk exposure is on the increase.

The aim of the paper is to analyze the practice of credit analysis in Serbia from the aspect of the use and usefulness of cash flow-based financial indicators. The study of the cash flow indicators' application refers to the assessment system of the business credit user's credit rating. The research methodology includes content analysis and empirical study based on scientific surveys.

According to the purpose of the research, besides the introduction and the conclusion, the paper contains four parts. After the introduction, the characteristics of the credit rating systems are described in the first part of the paper. The second part analyzes the role of cash flows in the credit rating system. The third part defines the methodology and data, while in the fourth, the research results are presented and described.

Credit Rating Assessment System

The credit rating assessment of a bank's business client implies getting to know the company's operations. By knowing the business cycle, the environment, and other customer business factors, credit analysts can complete the picture of the possibilities of servicing the loan and the credit risk to which the bank is exposed by a loan approval to a particular user. By collecting and understanding financial and non-financial information on the operations of the credit user, the information basis for making final credit decisions is gained. The basis for approving loans should be comprehensive because no financial techniques provide the complete financial picture of the company. The classic approach of analyzing and approving loans comprises the use of formal instructions, as well as subjectively interpreted information by creditors (Hanić et al. 2013).

The creditworthiness of the borrower is relevant, but not the only determinant of its

kreditnih službenika (Hanić i saradnici, 2013).

Kreditna sposobnost korisnika kredita je relevantna ali ne i jedina determinanta ocene njegovog boniteta. Bonitet kao kvalitativni i kvantitativni izraz poslovne sposobnosti preduzeća i sigurnosti njegovog privređivanja predstavlja sintetizovanu ocenu o finansijskoj stabilnosti, likvidnosti, solventnosti, adekvatnosti i strukturi kapitala, imovinskoj situaciji, profitabilnosti, riziku ostvarenja finansijskog rezultata i organizovanosti. Postoje različiti pristupi oceni boniteta preduzeća koji se koriste u zavisnosti od toga šta je namena ocene boniteta. U užem smislu posmatrano, bonitet izražava kreditnu sposobnost i likvidnost preduzeća, a u širem smislu bonitet izražava sveobuhvatnu poziciju preduzeća koja se ne ograničava na likvidnost, već podrazumeva sagledavanje materijalne, finansijske pozicije, pozicije na tržištu, organizacione i kadrovske pozicije, poslovnu reputaciju, razvojne programe i poslovnu perspektivu (Rodić i saradnici, 2011, 230). Banke dobijene informacije o bonitetu sažimaju i prezentuju u obliku kreditnog rejtinga koji predstavlja instrument ocene boniteta.

Metode po kojima se finansijski pokazatelji kombinuju i sažimaju u jedan kompozitni indeks koji pokazuje kreditni rejting preduzeća mogu biti različite. U literaturi se mogu naći brojni modeli za ocenu kreditne sposobnosti korisnika kredita koji se koriste u praksi. Pored Z-score modela, postoje i tradicionalni modeli po kojima se za ocenu kreditnog boniteta koriste osnovni finansijski pokazatelji koji pokazuju finansijski, imovinski i prinosni položaj preduzeća, kao i efikasnost upravljanja i tržišnu vrednost akcija preduzeća. Finansijska literatura i praksa prepoznaju i druge modele za procenu kreditne sposobnosti poput modela Miller-a i Relkin-a (Miller, Relkin, 1971), CreditMetrics i KMV modela (Lekpek, 2018, 40). U kreditne VaR modele u akademskoj literaturi se osim Morganovog CreditMetrics modela i Moody's-ovog KMV modela uobičajeno svrstavaju i CreditRisk+ model koji objavljuje Credit Suisse Financial Products i McKinsey-ev CPV model (Kozarević, 2012).

Kreditni skoring model se može predstaviti kao kombinacija seta finansijskih pokazatelja u obliku jednačine 1 u kojoj oznaka K pokazuje

kreditni rejting, X_N finansijske pokazatelje, w ponder, a N ukupan broj finansijskih pokazatelja (Penman, 2007, 728). Utvrđivanje pondera može biti zasnovano na različitim statističkim tehnikama poput multiplikovane diskriminacione analize (*Multiple Discriminant Analysis*) ili logičke analize (*Logic Analysis*). Najpoznatiji model koji je zasnovan na tehnikama diskriminacione analize jeste Altmanov Z-score. Iako je Z-score model zasnovan na preduzećima koja bankrotiraju, pogodan je i za ocenu neizvršenja dospelih obaveza po osnovu duga i sl.

$$K = (w_1 \times X_1) + (w_2 \times X_2) + \dots + (w_N \times X_N) \quad (1)$$

Agencija *Standard&Poor's* kao ključne pokazatelje za merenje rizika neispunjenja obaveza koristi sledeće pokazatelje: pokriće kamata pre oporezivanja; pokriće kamata dobitkom pre kamata, poreza i amortizacije; odnos prihoda iz poslovanja i ukupnog duga; odnos slobodnog novčanog toka i ukupnog duga; prinos na kapital pre oporezivanja; bruto profitna marža, odnos dugoročnog duga i ukupnog dugoročnog kapitala i odnos ukupnog duga i ukupnog kapitala (Damodaran, 2007, 177). Dodatne informacije dobijene od menadžmenta i vlasnika preduzeća takođe mogu biti uključene.

Rejting može biti kvantitativan ili kvalitativan. Kreditni rejting koji kombinuje informacije iz finansijskih izveštaja i druge informacije se najčešće rangira u rasponu od 1 do nekog definisanog broja. Ukoliko je rejting kvalitativna kategorija, kreditni rejting preduzeća može biti u kategoriji normalno prihvatljivog rizika, neizvestan ili nenaplativ (Penman, 2007, 728). Kreditni rejting može da sadrži kombinaciju slova i brojeva koji pokazuju kategoriju rejtinga, ali i znakova plus i minus koji pokazuju nivo rejtinga, čime se naglašavaju razlike u pojedinim ocenama rejtinga. Agencije mogu davati i mišljenja o očekivanom kretanju rejtinga u budućnosti (pozitivni, stabilni ili negativni izgledi po pitanju promene kreditnog rejtinga u narednom periodu).

Sistemom internog rejtinga banke određuju kriterijume i determinante koje im služe za utvrđivanje kreditne sposobnosti korisnika kredita. Analiza finansijskih pokazatelja čini

solvency. The creditworthiness as a qualitative and quantitative expression of business capability and the security of its business is a synthesized assessment of financial stability, liquidity, solvency, capital adequacy and capital structure, property situation, profitability, a risk of financial performance and organization. There are different approaches to the defined company's creditworthiness assessment depending on what is the purpose of assessing it. In the narrow sense, it expresses the company's creditworthiness and liquidity, while in the broader sense, it implies the overall position of an enterprise, not limited to liquidity only, but comprising the consideration of material and financial position, market position, organizational and personal positions, business reputation, developing programs and business prospects (Rodić et al., 2011, 230). The banks summarize and present the obtained credit information in the form of credit rating, as an instrument of creditworthiness assessment.

The methods by which financial indicators are combined and compressed into a composite index showing a company's credit rating may be different. In the literature, there are numerous models for assessing the creditworthiness of credit users that can be used in practice. Together with the Z-score model, there are traditional models that use financial indicators to present creditworthiness, indicating the financial, property and yield position of an enterprise, as management efficiency and market value of company shares. Financial literature and practice recognize other creditworthiness assessment models such as Miller and Relkin (Miller, Relkin, 1971), CreditMetrics and KMV models (Lekpek, 2018, 40). In addition to the Morgan CreditMetrix and Moody's KMV models, CreditRisk+ models are also commonly included in Credit VaR models, published by Credit Suisse Financial Products and McKinsey's CPV model (Kozarević, 2012).

Crediting model can be presented as a combination of a set of financial indicators in the form of equation 1 in which K shows the credit rating, X_N the financial indicators, w the weighting factor, and N the total number of financial indicators (Penman, 2007, 728). Determination of the weighting factor can be based on various statistical techniques such

as Multiple Discriminant Analysis or Logic Analysis. The most famous model considering the techniques of discriminatory analysis is Altman's Z-score. Although the Z-score model is based on bankrupting companies, it is also suitable for assessing of default in debt obligations, etc.

$$K = (w_1 \times X_1) + (w_2 \times X_2) + \dots + (w_N \times X_N) \quad (1)$$

Standard & Poor's agency uses the following indicators as the key indicator for measuring the risk of default in debt obligations: interest coverage before taxing, interest coverage by earnings before interest, tax and amortization; relationship between operating income and total debt; relationship between free cash flow and total debts; return on equity before taxing; gross profit margin, relation between long-term debts and total long-term capital, and relation between total debts and equity (Damodaran, 2007, 177). Additional information obtained from management and the company's owners may also be included.

The rating can be qualitative or quantitative. A credit rating that combines information from financial statements and other information is usually ranked in the range of 1 to a defined number. If the ranking is a qualitative category, the company's credit rating may be in the category of commonly acceptable risk, unreliable or uncollectible one (Penman, 2007, 728). A credit rating can include a combination of letters and numbers showing the rating category, as well as the plus and minus signs showing the rating level, thus highlighting differences in individual rating ranging. Agencies can also provide an opinion on the expected future rating trends (positive, stable, or negative).

The bank's internal rating system defines the criteria and determinants used to qualify creditworthiness of the credit user. The financial indicators analysis is a part of the internal rating system, whereby creditworthiness assessment also depends on nonfinancial determinants. Although banks may use internal credit rating systems, there is also the option to estimate the clients' creditworthiness by an external rating agency. Rating agencies grant a better rating if companies' financial performances are better.

deo sistema internog rejtinga, pri čemu ocena kreditnog boniteta zavisi i od determinanti nefinansijske prirode. Iako banke mogu koristiti i interne sisteme kreditnog rejtinga, postoji i mogućnost da procenu kreditne sposobnosti korisnika kredita vrše eksterne rejting agencije. Rejting agencije dodeljuju bolji rejting ukoliko su finansijske performanse preduzeća bolje. Rejting koji kreditne agencije dodeljuju preduzeću, utiče na kamatne stope po kojima se preduzeća mogu zaduživati.

Bazelski komitet za nadzor nad poslovanjem banaka (*Basel Committee on Banking Supervision - BCBS*) pruža mogućnost izbora sistema kreditnog rejtinga. Iako se u okviru koji se odnosi na međunarodnu konvergenciju merenja i standarda kapitala kao primer eksterne rejting institucije navodi *Standard&Poor's*, *BCBS* ne izražava naklonost prema navedenoj instituciji, već ističe da se za potrebe procene kreditne sposobnosti mogu koristiti i druge eksterne rejting institucije (*BCBS*, 2004). Na finansijskim tržištima pored *Standard&Poor's* agencije dominiraju *Moody's* agencija i *Fitch* agencija, s tim da postoje manje agencije koje su specijalizovane za određene sektore procene ili pokrivaju određena područja.

U cilju minimiziranja kreditnog rizika banke u Srbiji razvijaju različite interne sisteme, ali za konačnu ocenu kreditne sposobnosti koriste i izveštaje o bonitetu koje sastavljaju druge relevantne institucije. Izveštaji Kreditnog biroa čine deo dokumentacije koja je kreditorima potrebna za ocenu kreditne sposobnosti klijenata i za ispravno donošenje odluka o kreditiranju. Razvoj Kreditnog biroa i izveštaja koji sastavljaju donosi korist svim učesnicima na bankarskom i finansijskom tržištu u celini. Kreditni biro kao nacionalni registar podataka o tekućim, potencijalnim novčanim obavezama i urednosti fizičkih i pravnih lica u izmirivanju obaveza prema bankama i drugim organizacijama koje su uključene u sistem, organizovan je u okviru Udruženja banaka Srbije (*UBS*).

Sastavljanje Izveštaja o bonitetu je jedna od aktivnosti Agencije za privredne registre (*APR*) u Srbiji. Izveštaj je deo postupka vođenja Registra finansijskih izveštaja i podataka o bonitetu pravnih lica i preduzetnika. Reč je o sistematizovanom setu podataka o bonitetu za

period od tri godine, koji predstavlja osnov za sagledavanje rezultata poslovanja i finansijskog položaja pravnog lica ili preduzetnika. Prema metodologiji *APR*-a, izveštaj o bonitetu osim statusnih podataka sadrži i računovodstvene podatke i pokazatelje, podatke o reviziji finansijskih izveštaja, danima nelikvidnosti, hartijama od vrednosti i druge relevantne podatke. Računovodstveni podaci i pokazatelji se dobijaju na osnovu redovnih i vanrednih godišnjih finansijskih izveštaja pravnih lica i preduzetnika i konsolidovanih finansijskih izveštaja ekonomskih celina. Uobičajeni instrumenti finansijske analize koji se koriste za ocenu boniteta, odnose se na imovinsku strukturu, strukturu kapitala, efikasnost upravljanja imovinom i izvorima finansiranja, likvidnost i solventnost, profitabilnost, kao i na analizu tržišne vrednosti i budućeg rasta preduzeća (*APR*).

Novčani tokovi u sistemu ocene kreditnog rejtinga

Ocena kreditne sposobnosti zasnovana na analizi finansijskih izveštaja podrazumeva poznavanje i izbor relevantnih analitičkih instrumenata od strane kreditora. Razvoj analitičkih instrumenata u teoriji i njihova rasprostranjenost u praksi, posledica su širenja informacionih potreba kreditora i ostalih korisnika finansijskih izveštaja. Iako brojevi puno govore, kreditori treba da slušaju i fokusiraju se ne samo na računanje, već i na interpretaciju tih brojeva (*Ruth*, 2006, 1). Korišćenjem koncepta novčanih tokova povećava se upotreba vrednost instrumenata finansijske analize za potrebe kreditne analize.

Novčani tokovi korisnika kredita definišu potrebu za kreditiranjem, ali i izvore za otplatu kredita. Kreditori su zainteresovani za sposobnost generisanja novčanih sredstva koja su raspoloživa za otplatu duga i investiranje preduzeća. Činjenica je da gotovina, a ne obračunati dobitak, služi za otplatu kredita. Shodno tome, analiza novčanih tokova predstavlja značajan instrument u rukama kreditora koji razmatraju zahteve za pozajmljenim kapitalom, donose odluke o odobravanju kredita, uslovima pozajmice i vrsti nadgledanja tokom perioda otplate.

Credit agencies assessments influence interest rates of potential credit grant.

The Basel Committee of Banking Supervision (BCBS) provides a possibility of choice of credit rating systems. Although the BCBS does not express its affection towards the Standard & Poor's method, widely considered as an example, and the most relevant in the framework of international convergence of measurements and capital standards, they consider that other external rating institutions may also be consulted for the purposes of assessing creditworthiness (BCBS, 2004). Together with Standard & Poor's agency, financial markets recognize Moody's agency and Fitch agency, and some smaller agencies specialized in certain sectors of assessments or covering some specific areas.

In order to minimize credit risk, banks in Serbia develop different internal systems, while for the final assessment of creditworthiness they also use worthiness reports issued by other relevant institutions. The Credit Bureau reports present an integral part of the documentation for the assessment of the client's worthiness and making a right credit decision. The development of the Credit Bureau and their reports provide benefits to all participants in the banking and financial market as a whole. Being the national register of current, potential liabilities and regularity of private individuals and legal entities in settling their obligations towards banks and other organizations involved in the system, the Bureau was formed within the Association of Serbian Banks (ASB).

The preparation of the Solvency Report is one of the activities of the Serbian Business Registers Agency (SBRA). The Report is a part of the Register of Financial Statements and Solvency Data of Legal Entities and Entrepreneurs. It is a systematized set of solvency data for a period of three years, representing the basis for perceiving the business results and the financial position of the legal entity or entrepreneur. According to the SBRA methodology, the Solvency Report, apart from the status data also includes accounting data and indicators, financial audit data, illiquidity dates, securities, and other relevant information. Accounting data and indicators are obtained on regular and extraordinary financial statements and

consolidated financial statements of the legal entities and entrepreneurs. The usual finance analysis instruments providing the worthiness assessment are related to the structure of assets, structure of capital, efficiency of the assets and capital management, liquidity and solvency, profitability, and the market value and future business growth analysis, as well (SBRA).

Cash Flow in the Credit Rating System

The creditworthiness rating based on the financial statements analysis presumes the creditor's knowledge and choice of relevant analytical instruments. The development of analytical instruments in theory and their distribution in practice are the consequence of expanding information needs of creditors and other users of financial statements. Notwithstanding that the figures reveal a lot, creditors must listen and focus not only on the calculation but on the interpretation of these figures (Ruth, 2006, 1). Using the cash flow concept, it increases the value of financial analysis instruments applied for analyzing creditworthiness.

Client's cash flows define the need for bank credit financing, and sources for credit repayment as well. Creditors are interested in the ability to generate cash flows available for debt repayment and the company's investments. The fact is that cash rather than accrual earnings serve to repay the credit. Consequently, cash flow analysis is a significant instrument in the hands of creditors considering the requirements for credit, decision-making on credit approval, borrowing conditions and type of supervision during the repayment period. Financial statements are required to answer questions on enterprise success in generating net operating cash flow, trends of operating cash flows over the past period and what the main reasons for negative or positive net cash flow are (Kieso et al., 2010). The main fund sources for credit repayment are cash flow from goods and services' sale, net inflow from assets sale and net cash generated by issuing of long-term financial instruments or securities with the right to participate in profit (Checkley, 1990, 102). Although all three sources can

U finansijskim izveštajima se traže odgovori na pitanja u kojoj meri je preduzeće uspešno kada je u pitanju generisanje neto novčanog toka iz poslovanja, kakav je trend poslovnog novčanog toka tokom proteklih perioda i šta su glavni razlozi negativnog ili pozitivnog neto novčanog toka (Kieso i saradnici, 2010). Osnovni izvori sredstava iz kojih se otplaćuje kredit predstavljaju novčani tokovi po osnovu prodaje proizvoda i usluga, neto prilivi od prodaje dela imovine i neto novčana sredstva ostvarena izdavanjem dugoročnih finansijskih instrumenata ili hartija od vrednosti sa pravom učešća u dobiti (Checkley, 1999, 102). Iako sva tri izvora mogu generisati dovoljno gotovine za otplatu kredita, najpoželjnije je da osnovni izvor budu interno generisani novčani tokovi.

Kreditori su izloženi riziku da kamate i glavnica neće biti otplaćeni od strane korisnika kredita, što za rezultat ima korišćenje različitih instrumenata zaštite od rizika. Stabilan novčani priliv može biti značajan izvor zaštite, jer stabilniji prilivi gotovine znače veću sigurnost kreditora da će dospela potraživanja po osnovu kamate i glavnice kredita biti naplaćena (Gogan, 2004, 436).

Nedostaci u neto novčanim tokovima predstavljaju glavni indikator slabljenja poslovanja i pojave problema sa otplatom kredita. Osim visine i trenda, važno je utvrditi šta čini osnovu poslovnih tokova gotovine. Pristup utvrđivanja poslovnog neto novčanog toka koji uzima u obzir neto dobitak, bezgotovinske troškove, promene zaliha, potraživanja i ostalih relevantnih elemenata neto obrtnog kapitala je pogodan za praćenje novčanih tokova jer usmerava pažnju na faktore poslovanja. Efikasnim upravljanjem neto obrtnim sredstvima i kapitalom, moguće je smanjenje potencijalne potrebe za eksternim finansiranjem i lakša otplata postojećih dugovanja (Checkley, 1999, 72). Analiza gotovinskog ciklusa preduzeća je za kreditore važna, jer neto novčani tok koji preostaje u ciklusu poslovnih aktivnosti, raspoloživ je za finansiranje investicionih i finansijskih poduhvata.

Prema metodologiji APR-a, za analizu profitabilnosti i tržišne vrednosti preduzeća za potrebe sastavljanja izveštaja o bonitetu nije predviđeno korišćenje pokazatelja koji su zasnovani na novčanim tokovima. Za

analizu likvidnosti je predviđeno korišćenje racia novčane likvidnosti i cash flow-a. *Standard&Poor's* agencija uključuje odnos slobodnog novčanog toka i ukupnog duga u set pokazatelja koje koristi za merenje rizika neispunjenja obaveza (Damodaran, 2007, 177).

Metodologija istraživanja i podaci

Metodologija istraživanja obuhvata analizu sadržaja i empirijska istraživanja zasnovana na naučnim anketama. Pregled postojećih istraživanja o upotrebnoj vrednosti informacija koje su zasnovane na novčanim tokovima za kreditne analitičare je upotpunjen sagledavanjem prakse kreditne analize privrednih korisnika bankarskih plasmana u Srbiji. Postupak kreditne analize je proučavan sa aspekta primene finansijskih pokazatelja kao instrumenata analize u sistemu ocene kreditnog rejtinga privrednih klijenata banke.

Struktura seta finansijskih indikatora koji se primenjuju prilikom utvrđivanja kreditnog rejtinga klijenata banke je analizirana na osnovu ključnih finansijskih pokazatelja koji se odnose na likvidnost, finansijski leveridž i profitabilnost. Anketnim upitnikom su predviđeni uobičajeni finansijski pokazatelji prisutni u literaturi i praksi. Fokus autora rada je na analizi primene finansijskih indikatora koji su zasnovani na novčanim tokovima.

Finansijski pokazatelji se koriste kao opšti indikatori poslovanja preduzeća. Za potrebe ispitivanja primene cash flow pokazatelja u postupku utvrđivanja kreditnog rejtinga, kao i za potrebe ocene korisnosti cash flow pokazatelja za donošenje odluka o kreditiranju, u radu je korišćeno osam cash flow pokazatelja koji su grupisani u četiri kategorije.

Pokazatelj likvidnosti:

- *Cash Flow* (CF) pokazatelj likvidnosti pokazuje odnos vrednosti neto novčanog toka iz poslovanja i kratkoročnih obaveza. Pokazatelj meri sposobnost preduzeća da generisanim poslovnim neto novčanim tokom izmiri prosečne kratkoročne obaveze. Pokazatelj finansijskog leveridža:
- Pokriće obaveza iz CFO (*Cash Flow Operating*) pokazuje odnos vrednosti poslovnog neto novčanog toka i ukupnih obaveza. Pokazatelj meri sposobnost preduzeća da generisanim

generate enough cash to repay the loan, the most desirable is that the fundamental source is internally generated cash flow.

Creditors are exposed to the risk that interest and principal will not be repaid, so the result is the use of a number of risk protection instruments. Stable cash inflow can be a significant source of protection because more stable cash flows mean a greater security that the current receivables based on interest and principal will be charged (Gogan, 2004, 436).

Net cash flow deficiencies are the main indicator of weakened operations and the problem of credit repayment. Besides the level and trends, it is important to determine what constitutes the operating cash inflows. The approach to determining net operating cash flow, taking into account earnings, non-cash expenses, changes in inventories, receivables and other relevant elements of net working capital, is suitable for analyzing cash flows, as it focuses attention on operating factors. Efficient management of net working assets and equity, provides the decrease of potential needs for external financing and easier repayment of existing debts (Checkley, 1999, 72). The analysis of a company's cash cycle is important for creditors, due to the fact that net cash flow remaining in the operating activities cycle is available for financing investments and financing activities.

According to the SBRA methodology, the analysis of a company's profitability and market value needed for preparing the Solvency Report do not include the use of the cash flow based indicators. The liquidity analysis requires the use of cash liquidity indicators and cash flows analysis. Standard & Poor's agency includes a relation between free cash flow and the total debt in a set of indicators used to measure the risk of default in debt obligations (Damodaran, 2007, 177).

Methodology and Data

The research methodology includes content analysis and empirical research based on scientific surveys. An overview of existing studies on the use value of cash flow based information for credit analysts is complemented by reviewing the credit analysis practice of the

Serbian banks' business credit users. The credit analysis process is studied from the aspect of applying financial indicators as an analytic instrument in the credit rating system of the banks' business clients.

The structure of the financial indicators set used to define the bank clients' credit rating is analyzed based on key financial indicators related to liquidity, financial leverage, and profitability. The survey questionnaire provides the usual financial indicators presented in the literature and practice. The focus of the paper is on the analysis of financial cash flow based indicators.

Financial indicators are used as general indicators of business performance. For the purposes of testing the use of cash flow indicators in the credit rating process, as well as for assessing the usefulness of cash flow indicators for making credit decisions, eight cash flow indicators were grouped into four categories.

Liquidity indicator:

- Cash Flow (CF) liquidity indicator shows the relation between net operating cash flow and short-term liabilities. The indicator measures the company's ability to cover average short-term liabilities by net operating cash flows.

Financial leverage indicators:

- Liabilities Coverage ratio by Cash Flow Operating (CFO) shows the relation between net operating cash flow and total liabilities. The indicator measures the company's ability to cover average total liabilities by net operating cash flow. It is one of the three indicators proved to be the best in predicting financial distress (Beaver, 1968).

- Interest Coverage ratio by CFO shows the relation between net operating cash flow and interest expenses. The indicator is considered as a measure of coverage of interest expenses by net operating cash flow.
- Profitability indicators:

- CF margin (Cash Flow margin) shows the relation between net operating cash flow and sale revenues;
- Cash Flow Return on Assets (CF ROA) shows the relation between net operating cash flow and assets value. It measures the company's capacity to use disposing assets in generating net operating cash flow;

poslovnim neto novčanim tokom izmiri prosečne ukupne obaveze. Jedan je od tri pokazatelja koji su se pokazali kao najbolji u predviđanju finansijskih teškoća (Beaver, 1968);

- Pokriće kamata iz CFO pokazuje odnos poslovnog neto novčanog toka i rashoda kamata. Pokazatelj se posmatra kao merilo pokrića rashoda kamata poslovnim neto novčanim tokom preduzeća.

Pokazatelji profitabilnosti:

- CF marža pokazuje odnos poslovnog neto novčanog toka i prihoda od prodaje;
- *Cash Flow Return on Assets* (CF ROA) pokazuje odnos poslovnog neto novčanog toka i vrednosti imovine. Pokazatelj meri sposobnost preduzeća da korišćenjem raspoložive poslovne imovine generiše poslovni neto novčani tok;
- *Cash Flow Return on Equity* (CF ROE) pokazuje odnos poslovnog neto novčanog toka i vrednosti kapitala. Pokazatelj meri sposobnost preduzeća da iz ostvarenog neto novčanog toka iz poslovanja izvrši povraćaj investiranog sopstvenog kapitala.

Vrednosni pokazatelji:

- CF po akciji (*Cash Flow per Share*) pokazuje iznos poslovnog neto novčanog toka po jednoj akciji;
- P/CF (*Price-Cash Flow*) pokazuje odnos tržišne cene akcije i iznosa poslovnog neto novčanog toka po akciji.

Anketiranjem i intervjuisanjem kreditnih analitičara banaka koje posluju u Srbiji koji su nadležni za kreditne plasmane privredi, prikupljeni su između ostalog i iskustveni podaci koji su relevantni za oblast istraživanja na koju se rad odnosi.

Anketirani analitičari izražavaju stručno mišljenje o korisnosti odabranih pokazatelja koji su zasnovani na novčanim tokovima, nezavisno od njihovog stepena primene u postojećim sistemima utvrđivanja kreditnog rejtinga banaka u kojima rade. Korisnost pokazatelja se vrednuje ocenama u rasponu od 1 (nije koristan) do ocene 5 (veoma koristan).

U anketno istraživanje su

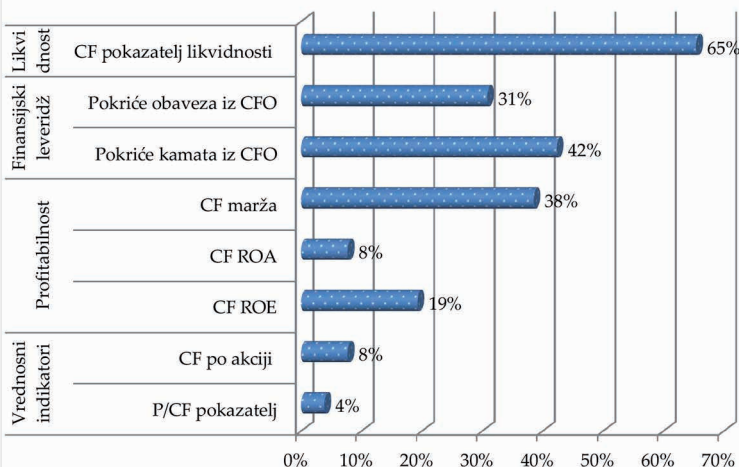
prvobitno uključeni kreditni analitičari 26 banaka, što je 87% ukupnog broja banaka koje su poslovale u Srbiji u periodu realizacije istraživanja (NBS, 2015). Inicijalni izbor banaka je određen činjenicom da banke imaju status aktivnih pravnih subjekata i da obezbeđuju kreditne plasmane privrednim subjektima. Tokom realizacije istraživanja, anketirano je 26 kreditnih analitičara. Broj banaka čiji su analitičari učestvovali u anketiranju je 12, što čini oko 48% ukupnog broja banaka koje su inicijalno uključene u anketno istraživanje.

Rezultati istraživanja

Rezultati anketnog istraživanja se odnose na stepen primene finansijskih pokazatelja u postupku utvrđivanja kreditnog rejtinga banaka u Srbiji i na ocenu korisnosti cash flow pokazatelja za donošenje odluka o kreditiranju. Finansijski pokazatelji zasnovani na novčanim tokovima se prema mišljenju anketiranih kreditnih analitičara u manjoj meri primenjuju u odnosu na pokazatelje koji su zasnovani na pozicijama bilansa stanja i bilansa uspeha.

Slika 1 pokazuje zastupljenost cash flow indikatora u sistemu utvrđivanja kreditnog rejtinga klijenata. Zastupljenost je iskazana kao procentualno učešće broja ispitanika koji su naveli da pokazatelji čine deo sistema ocene kreditne sposobnosti u odnosu na ukupan broj anketiranih kreditnih analitičara.

Slika 1. Cash flow indikatori u sistemu utvrđivanja kreditnog rejtinga



Izvor: Rezultat istraživanja autora

Napomena: CF (*Cash Flow*) - novčani tokovi; CFO (*Cash Flow Operating*) - poslovni neto novčani tok; ROA (*Return On Assets*) - prinos na imovinu; ROE (*Return On Equity*) - prinos na kapital; P (*Price*) - cena

- Cash Flow Return on Equity (CF ROE) shows the relation between net operating cash flow and equity value; It measures the company's capacity to provide the return of invested own capital through net operating cash flow.

Market indicators:

- CF per share (Cash Flow per Share) shows net operating cash flow per share value;
- P/CF (Price-Cash flow) is the relation between share price and net operating cash flow per share value.

Surveying and interviewing credit analysts of banks operating in Serbia responsible for corporate loans, inter alia, collected the experimental data relevant to the related area of the paper.

Surveyed analysts express the professional opinion on the usefulness of selected cash flow based indicators, regardless of their application degree in the existing assessing credit rating systems in the banks they are working in. The usefulness of the indicators is evaluated by estimates ranging from 1 (not useful) to 5 (very useful).

The credit analysts of 26 banks were initially involved in the survey, accounting for 87% of the total number of banks operating in Serbia during the period of the research (NBS, 2015). The incipient selection of the banks is determined by the fact that they have the status of active legal entities and approve loans to business legal entities. During the survey realization, 26 credit analysts were interviewed. The number of banks whose analysts have participated in the survey is 12, which makes about 48% of the total number of banks initially involved in the study.

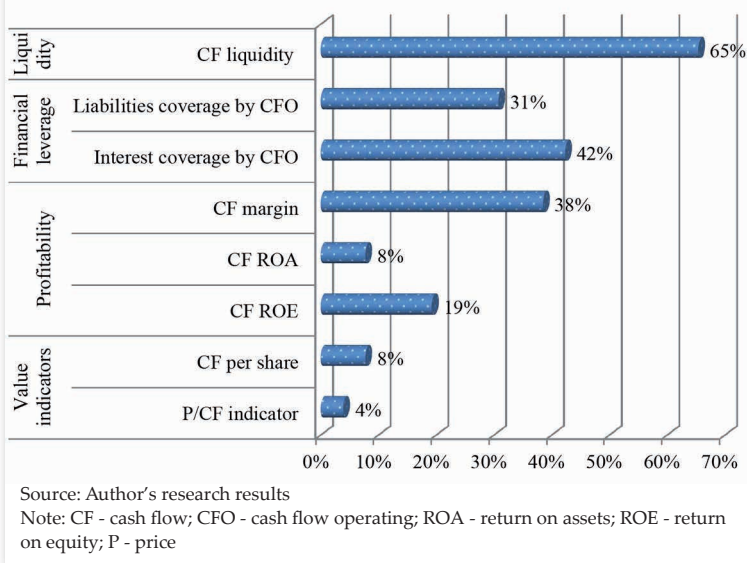
Research Results

The results of the survey are related to the degree of application of financial indicators in the process of determining the credit rating that banks in Serbia have, and to the assessment of the usefulness of cash flow indicators for making credit decisions. According to the

opinion of surveyed credit analysts, the cash flow based financial indicators are applied to a lesser extent in relation to indicators based on balance sheet and income statements.

Graph 1 shows the presence of cash flow indicators in the bank's credit rating system. The presence is expressed as the percentage of respondents approving that the indicators are the part of the credit rating system, in relation to the total number of surveyed credit analysts.

Graph 1. Cash Flow Indicators in a Credit Rating System



In the opinion of 65% of analysts, the cash flow liquidity indicator forms part of the bank's credit rating system, and it is lower than the traditional liquidity (current liquidity ratio: 73%, and quick liquidity ratio: 73%; Stevanović, 2015). Commonly, the credit rating system contains a combination of mentioned liquidity indicators.

Cash flow based coverage indicators are in the opinion of surveyed credit analysts, applied to a lesser extent in relation to the indebtedness indicator and other ones of financial leverage. The cash flow interest coverage indicator use 42% of surveyed analysts, while the presence of the comparative ratio (interest coverage by earnings) in the credit rating system is higher, amounting 73% (Stevanović, 2015).

Cash flow margin, cash flow return on assets and cash flow return on equity are cash flow based profitability indicators, were the subject of surveyed analysts. The CF margin as a relation between net operating cash flow and

Prema mišljenju 65% anketiranih analitičara, cash flow pokazatelj likvidnost čini deo sistema utvrđivanja kreditnog rejtinga privrednih klijenata banke, što je niže u odnosu na tradicionalne pokazatelje likvidnosti (pokazatelj tekuće likvidnosti: 73% i pokazatelj monetarne likvidnosti 73%; Stevanović, 2015). Najčešće sistem utvrđivanja kreditnog rejtinga sadrži kombinaciju pomenutih pokazatelja likvidnosti.

Pokazatelji pokrića zasnovani na novčanim tokovima se prema mišljenju anketiranih kreditnih analitičara u manjoj meri primenjuju u odnosu na pokazatelj zaduženosti i ostale pokazatelje finansijskog leveridža. Pokazatelj pokrića kamata neto novčanim tokom iz poslovanja primenjuje 42% anketiranih analitičara, dok je zastupljenost komparativnog pokazatelja pokrića kamata iz zarada u sistemu kreditnog rejtinga veća i iznosi 73% (Stevanović, 2015).

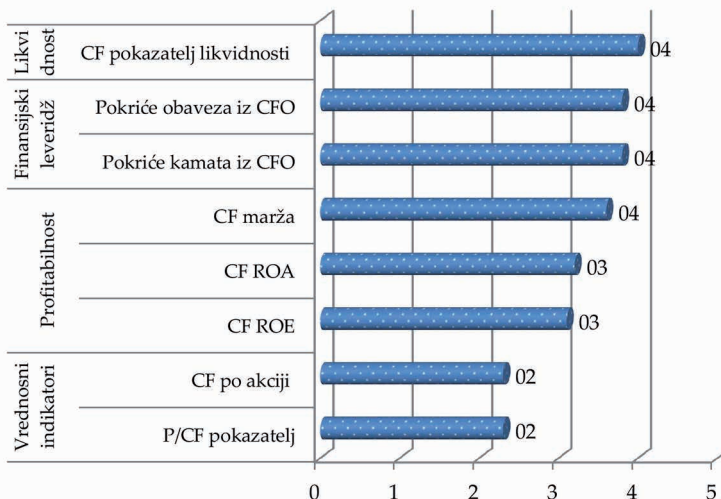
CF marža, novčani prinos na imovinu i novčani prinos na kapital su pokazatelji profitabilnosti zasnovani na novčanim tokovima koji su bili predmet ispitivanja anketiranih analitičara. CF marža kao odnos neto novčanog toka iz poslovanja i prihoda od prodaje je izbor 38% ispitanika, dok profitnu maržu koristi čak 85% analitičara prilikom utvrđivanja kreditnog rejtinga klijenta banke. Novčani prinos na kapital i novčani prinos na imovinu utvrđuje svega 19% i 8% analitičara respektivno, dok je taj procenat preko 50% u slučaju primene njihovih komparativnih indikatora koji su zasnovani na tokovima rentabiliteta (prinos na kapital 54% i prinos na imovinu 58%).

Uključivanje vrednosnih pokazatelja u analizu profitabilnosti preduzeća je korisno pre svega iz perspektive investitora. Njihova zastupljenost u analizi kreditnog rejtinga je najniža u odnosu na sve posmatrane pokazatelje, a naročito u odnosu na pokazatelje finansijske sigurnosti. Više od 50% ispitanika ističe da ne koristi vrednosne pokazatelje u kreditnoj analizi. Među 42% analitičara koji su prepoznali

primenu određenih vrednosnih pokazatelja, najzastupljeniji su analitičari koji koriste pokazatelj dobitak po akciji, a zatim analitičari koji u sistem kreditnog rejtinga uključuju P/E pokazatelj. Primena cash flow pokazatelja po akciji i odnosa tržišne vrednosti i poslovnog neto novčanog toka po akciji od strane 8% i 4% anketiranih analitičara respektivno, izrazito je niska.

Bez obzira na zastupljenost navedenih cash flow pokazatelja u sistemu utvrđivanja kreditnog rejtinga banke u kojoj su angažovani, kreditni analitičari su ocenili korisnost navedenih pokazatelja u skladu sa ličnim stavovima i kompetencijama. Ocene korisnosti odabranih pokazatelja likvidnosti, finansijskog leveridža, profitabilnosti i vrednosnih pokazatelja koji su zasnovani na novčanim tokovima prilikom utvrđivanja kreditnog rejtinga klijenta banke su prikazane na slici 2.

Slika 2. Ocena korisnosti cash flow indikatora u sistemu utvrđivanja kreditnog rejtinga



Izvor: Rezultat istraživanja autora

Napomena: CF (cash flow) - novčani tokovi; CFO (cash flow operating) - poslovni neto novčani tok; ROA (return on assets) - prinos na imovinu; ROE (return on equity) - prinos na kapital; P (price) - cena

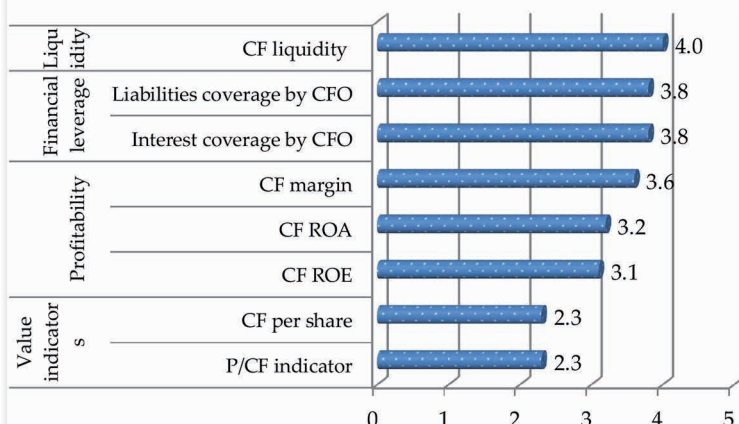
Pokazatelj likvidnosti i odabrani cash flow pokazatelji pokrića su najbolje ocenjeni pokazatelji sa aspekta korisnosti u procesu donošenja odluka o kreditiranju klijenata, što potvrđuje značaj cash flow indikatora kratkoročne i dugoročne finansijske sigurnosti za ocenu sposobnosti servisiranja obaveza po osnovu kredita. Prosečna ocena korisnosti cash flow pokazatelja likvidnosti iznosi 4 od maksimalnih 5, pri čemu čak 35% analitičara

sale revenues is a choice of 38% of respondents, while the profit margin is used by as many as 85% of analysts when determining the credit rating of bank's clients. Cash flow return on equity and cash flows return on assets determines only 19%, and 8% of analysts respectively, while this percentage is over 50% in the case of applying their comparative indicators based on profitability flows (return on equity 54%, and 58% return on assets).

The inclusion of value indicators in the profitability analysis of the company is useful primarily from the perspective of the investor. Their presence in the credit rating analysis is the lowest in relation to all the observed indicators, particularly in relation to financial security indicators. More than 50% of respondents point out that they do not use value indicators in their analysis. Among the 42% of analysts which recognized the application of certain value indicators, the most prominent are those who use the earnings per share indicator, followed by those who include P/E indicator in the credit rating system. The use of the cash flow per share indicator and the indicator that shows the relationship between price and net operating cash flow per share by 8% and 4% of the surveyed analysts respectively are extremely low.

Regardless of the presence of these cash flow indicators in the bank's credit rating system, the credit analysts assessed the usefulness of these indicators in accordance with their personal attitudes and competencies. The usefulness of the selected cash flow based indicators of liquidity; financial leverage, profitability, and value indicator important for determining the credit rating of a bank's client are shown in Graph 2.

Graph 2 - Usefulness of Cash Flow Indicators in the Credit Rating System



Source: Author's research results

Note: CF - cash flow; CFO - cash flow operating; ROA - return on assets; ROE - return on equity; P - price

Cash flow liquidity indicator and selected cash flow leverage indicators are the best valued indicators with respect to usefulness in the process of credit decision making, which confirms the significance of short-term and long-term financial stability indicators based on cash flow to assess the ability to service credit. The average mark of the liquidity cash flow indicators' usefulness is 4 (of a maximum of 5), with as many as 35% of analysts estimating the indicator as very useful (Stevanović, 2015).

Although the presence of the indicator of interest coverage by net operating cash flow is higher (42%) than the one of total liabilities coverage by net operating cash flow (31%), the assessment of their usefulness in the process of determining the credit rating is equated according to the opinion of the surveyed analysts. Unlike the average mark of usefulness, being about 3.8 for both indicators, the distribution of mentioned long-term financial security cash flow indicators is different.

The average assessment of the CF margin usefulness for making credit decision is 3.6. The cash flow indicators of return as a measurement of return use net operating cash flow, where the usefulness of cash flow return on assets indicator (3.1), and cash flow on equity indicator (3.2) are almost equated. Average marks of cash flow return on assets and cash flow return on equity are the result of a dominant opinion that these indicators are moderately useful for making the credit decision. Only 4% of the respondents

pokazatelj ocenjuje kao veoma koristan (Stevanović, 2015).

Iako je zastupljenost pokazatelja pokrića kamata iz neto novčanog toka iz poslovanja veća (42%) u odnosu na pokazatelj pokrića ukupnih obaveza iz poslovnog neto novčanog toka (31%), ocena njihove korisnosti u procesu utvrđivanja kreditnog rejtinga je prema mišljenu anketiranih analitičara izjednačena. Za razliku od prosečne ocene korisnosti koja za oba pokazatelja iznosi oko 3,8 distribucija ocena navedenih cash flow pokazatelja dugoročne finansijske sigurnosti se razlikuje.

Prosečna ocena korisnosti CF marže za donošenje odluka o kreditiranju klijenta iznosi 3,6. Pokazatelji novčanih prinosa kao merilo prinosa koriste neto novčani tok iz poslovnih aktivnosti, pri čemu su ocena korisnosti pokazatelja novčanog prinosa na imovinu (3,1) i pokazatelja novčanog prinosa na kapital (3,2) skoro izjednačene. Prosečne ocene novčanog prinosa na imovinu i novčanog prinosa na kapital su rezultat dominantnog mišljenja analitičara da su pomenuti pokazatelji umereno korisni za donošenje odluka o kreditiranju. Svega 4% ispitanika nije iznelo ocenu korisnosti CF marže, dok je taj procenat viši kod ostala dva cash flow pokazatelja profitabilnosti i iznosi 12%. Učešće ispitanika bez odgovora je malo s obzirom da 62%, 92% i 81% ispitanika respektivno ističu da CF maržu, novčani prinos na imovinu i novčani prinos na kapital ne koriste prilikom utvrđivanja kreditnog rejtinga klijenata banke.

Prosečne ocene korisnosti cash flow pokazatelja po akciji i P/CF pokazatelja za donošenje kreditnih odluka su izrazito niske, kao i zastupljenost navedenih pokazatelja u postojećim sistemima utvrđivanja kreditnog rejtinga banaka, što ne iznenađuje jer su u pitanju pokazatelji koje češće koriste investicioni analitičari nego kreditni analitičari. Vrednosni indikatori kao pokazatelji profitabilnosti zasnovani na tržišnim informacijama se ređe uzimaju u obzir i zbog nivoa likvidnosti hartija od vrednosti koje se kotiraju na berzanskom tržištu i broja kompanija čija se tržišna cena prati na berzi.

Zaključak

Sistem analize kreditnog rejtinga preduzeća je oblast relevantna za naučna i stručna istraživanja. Kreditori pažljivo ispituju i analiziraju finansijske izveštaje jer su zainteresovani za mogućnosti preduzeća u pogledu izmirenja obaveza po osnovu kredita. Ključan doprinos rada se odnosi na ocenu zastupljenosti i korisnosti cash flow pokazatelja kao instrumenata finansijske analize koje koriste kreditni analitičari odabranih banaka u Srbiji prilikom ocene kreditnog rejtinga privrednih korisnika bankarskih plasmana.

Rezultati empirijskih istraživanja pokazuju da su cash flow pokazatelji u kreditnoj analizi zastupljeni u manjoj meri u odnosu na tradicionalne finansijske pokazatelje koji se obračunavaju na osnovu pozicija bilansa uspeha, bilansa stanja i tržišnih informacija. Prema anketiranim analitičarima, najveću zastupljenost u sistemu utvrđivanja kreditnog rejtinga privrednih klijenata banke beleže cash flow pokazatelj likvidnost i pokazatelj pokrića kamata iz poslovnog neto novčanog toka. Među pokazateljima profitabilnosti koji su zasnovani na novčanim tokovima, najveću primenu beleži CF marža. Najmanja zastupljenost vrednosnih pokazatelja u analizi kreditnog rejtinga je razumljiva s obzirom da je njihov značaj veći u analizi profitabilnosti preduzeća iz perspektive investitora.

Rezultati ispitivanja pokazuju da su anketirani kreditni analitičari banaka u Srbiji svesni korisnosti primene cash flow informacija privrednih klijenata banke u sistemu utvrđivanja kreditnog rejtinga. Cash flow pokazatelj likvidnosti i odabrani cash flow pokazatelji pokrića su najbolje ocenjeni pokazatelji sa aspekta korisnosti u procesu donošenja odluka o kreditiranju klijenata, što potvrđuje značaj cash flow indikatora kratkoročne i dugoročne finansijske sigurnosti za ocenu sposobnosti servisiranja obaveza po osnovu kredita.

did not estimate the usefulness of the CF margin, while that percentage increases for two other cash flow indicators of profitability, amounting to 12%. The share of respondents with no response is low, given that 62%, 92% and 81% of responders respectively point out that CF margin, cash flow return on assets, and cash flow return on equity are not used when determining banks clients' credit rating.

The average marks of the cash flow per share indicator and P/CF indicator for making credit decision are extremely low, as well as the distribution of mentioned indicators in existing system of banks credit rating assessment which is not a surprise, due to being the indicators more often used by investment analysts than credit ones. Value indicators as a sign of profitability based on market information are rarely taken into account due to the liquidity level of the securities' traded on the stock market, and the number of companies whose market price is being monitored on the stock exchange.

Conclusion

The credit rating system of an enterprise is a relevant area for scientific and professional research. The creditors carefully examine and analyze the financial statements endeavoring to understand the company with regard to the settlement of the loan obligations. The paper's key contribution relates to the assessment of

the presence and usefulness of the cash flow indicators as financial analysis instruments applied by credit analysts of selected banks in Serbia when evaluating credit rating of business credit users.

The empirical research results indicate that cash flow based indicators in credit analysis are represented less than traditional financial indicators calculated on the basis of the income statement, balance sheet, and market information. According to the surveyed analysts, the cash flow liquidity indicator and the indicator of interest coverage by the net operating cash flow are the most representative in the credit rating system. Among the cash flow based profitability indicators, the cash flow margin has the widest application. The lowest representation of value indicators in the credit rating analysis is justified since their significance is greater in the company's profitability analysis from the investor's perspective.

The survey results show that respondent banks' credit analysts in Serbia are aware of the usefulness of applying cash flow information of banks' business clients in the credit rating system. Cash flow liquidity indicator and selected cash flow leverage indicators are best-ranked indicators when considering the usefulness in the credit decision-making process, confirming the significance of cash flow indicators of short-term and long-term financial stability for assessing the ability to service credit obligations.

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