

The Significance of Transaction Costs in the Measurement of Balance Credit Liabilities

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KEY WORDS: credit liabilities, amortized cost method, effective interest rate

ABSTRACT - In the last years, the banking sector has experienced a number of significant changes in terms of liabilities measurement from credits, loans and securities emission, because of their positions in bank assets. The new regulation in financial accounting, which has been in practice since 2005, introduce an amortized cost method at effective interest rate to the measurement of credits and others. The following paper is devoted to the problem of including transaction costs into the credit measurement. The paper particularly points out the influence of transaction costs clearance on the bank's final activity results. Transaction costs constitute a very important and not entirely explored area of economics. Their existence could be attributed to imperfect information as well as limited human cognitive abilities and human error. Transaction costs occur on the market level (friction of market forces) and in the business as managerial costs.

Strokovni članek

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KLJUČNE BESEDE: krediti, amortizacija, stroški, efektivna obrestna mera

POVZETEK - V zadnjih letih je bančni sektor doživel številne pomembne spremembe na področju merjenja obveznosti iz naslova kreditov, posojil in vrednostnih papirjev zaradi pozicije le-teh v bančnih sredstvih. Nova uredba v finančnem računovodstvu, ki je v praksi od leta 2005, predstavlja amortizirano stroškovno metodo z efektivno obrestno mero za merjenje kreditov in ostalih obveznosti. Prispevek obravnava problem vključevanja transakcijskih stroškov v merjenje kreditov in zlasti poudarja vpliv izbrisa transakcijskih stroškov na končne rezultate dejavnosti banke. Transakcijski stroški pomenijo zelo pomembno in še ne povsem raziskano področje ekonomike. Njihov pojav lahko pripišemo nepopolnim informacijam in tudi omejenemu znanju zaposlenih ter napakam pri delu. Transakcijski stroški se pojavljajo na ravni trga (trenje tržnih sil) in pri poslovanju kot vodstveni stroški.

1 Introduction

Significant changes in the measurement of loan receivables, credits or bond issues— therefore bank's main assets – have occurred within the Polish banking sector over the past few years. New regulations in International Financial Reporting Standards and Poland's accounting legislation update, which came into effect in 2005, also introduced a new method of measurement of credit debts via amortised cost. This paper focuses on the topic of inclusion of transaction costs in the balance sheet measurement of credits. The influence of settling transaction costs on banks' financial results also received particular attention in this article.

2 The Essence of Transaction Costs

Definition of transaction costs appeared in economics in the 1930s, mainly thanks to the economist Ronald Coase. He argued that various types of costs accompany

every transaction, which combined match the force of friction in the physical system. In 1937 Ronald Coase published a paper *The Nature of the Firm*, which is often considered the beginning of new institutional economics, which constitutes an attempt to modify and expand neoclassical economics. This new stream in economics accepts the main neoclassic postulates but it rejects the instrumental treatment of rationality as the mechanism to effective, unlimited and operating with full access to information.

Transaction costs constitute a very important, and yet not completely explored area of economics. They exist as result of incomplete information, limited cognitive and calculative capacities of human beings, as well as the fact that people make arithmetic mistakes. Transaction costs appear on the market level (friction of market forces), including on the level of a single business, in the form of managerial costs. The literal interpretation of the term "transaction costs" suggests there are costs (losses) incurred during preparation, implementation, and execution of market transactions. Categories of transaction costs are thus not identical, and therefore it is vital to distinguish between pre- and post-transaction costs. The latter mainly apply to the supervision (control) imposed to assure the transaction's correct implementation.

Coase noted that transaction costs receive relatively little attention when developing rigorous economic models, due to which theories are far removed from economic behaviours. A significant proportion of economic theories functions as if transaction costs did not exist, regardless of the fact that in practice their value is always positive.

While Coase's postulates appear justified, it is necessary to point out that standardization of transaction costs poses a number of difficulties. The difficulty in identifying this category of costs is especially troublesome. Due to the fact that in practice every contract is incomplete and businesses can expect opportunistic behaviours from their trade partners, they must also prepare to manage the transaction costs accompanying the unforeseen events. The likelihood of such events depends exclusively on the transaction's moral objectives, which are impossible to quantify.

It is vital to point out that Coase's insights allow us to better understand the logic of introducing useful institutional solutions, such as transparent and effective legal system. Those solutions have very strong grounding, because they soften the effects resulting from the friction of economic forces - market failures, featuring in every economic system where transaction costs occur. To sum up, good institutional solutions make the smooth execution of contracts possible and minimise the unnecessary transaction costs, despite the obvious difficulties in expressing them in monetary terms.

3 Charges and Costs Associated With Loan Disbursement

The problem of quantifying and inclusion of transaction costs has also appeared in financial instruments' accounting. The valuations for some of them, with the use of an effective interest rate, allow us to consider the account transaction costs, which adjust the set inner return rate for the financial instrument. According to the guidelines (OS §13) published with reference to the International Accounting Standard (IAS) 39,

fees and commissions payable to agents, consultants, intermediaries and brokers, as well as fees imposed by regulatory agencies and stock exchanges are considered to be transaction costs linked to the implementation of contracts for financial instruments. In this context, employees acting as salespersons for the financial instrument are also considered the agents (intermediaries). For that matter, however, fees payable for premiums or discounts from the financial debt instruments, financing costs, storage of financial instruments or administration costs are not considered the transactions costs.

The aforementioned problem of measuring and identifying the transaction costs is particularly relevant for the measurement of banks' credit operations. Until the end of 2004, the loan receivables were recognized in the balance sheet in accordance with the principles of historical nominalism, including the existing repayments and specific risk provisions. Interest was calculated according to the contractual interest rate, and commissions (and other fees) were usually charged once (at the time of loan disbursement) and collated with profit and loss account, acting thus as a separate part of the bank's income.

Currently credits are valued using the amortised cost method, whereby initially recognized at their nominal value they should be adjusted for:

- capital repayments,
- amortisation of any differences between initial value and value at maturity, calculated with the use of an effective interest rate,
- write-offs due to losses, defaults or specific risk provisions.

The effective interest rate reduces the expected stream of future monetary payments to the current net balance sheet value during the financial instrument's expected life. Effective interest for the financial debt instrument is calculated based on the following formula:

$$P_0 = \sum_{t=1}^n C_t (1 + r_e)^{-t}$$

where:

P_0 – is the current financial debt instrument's value,

C_t – payments due from the entity that owns the financial debt instrument, in the timeframe $t = 1, 2, \dots, n$,

r_e - effective rate of return, known as the rate to maturity.

Determination of the effective interest rate for credits covers all payments made or received by the bank, which constitute an integral part of the effective interest rate, as well as directly connected transaction costs. Commissions, which are an integral part of the effective yield of loans are taken, amongst others, for activities such as an evaluation of the borrower's financial situation, an evaluation and establishment of legal guarantees or preparation of credit documentation.

Transaction costs were defined in the §9 IAS 39 as marginal costs, i.e. the costs which would not be incurred if the business had not entered the transaction and, which are directly attributable to a particular transaction.

Transaction costs cover:

- external costs, such as payments and taxes associated with the transaction, and
- operational costs, such as salaries of employees directly involved in the transaction

Examples of the external costs can be: costs of the measurement or costs resulting from guaranteeing the credit repayments, costs of services provided by the Credit Information Bureau, costs paid to credit intermediaries or costs of credit insurance. Commissions for the credit paid to employees acting as salespersons can also be classified as operational costs, on condition that they are precisely assigned to a specific credit agreement. In the effective interest rate calculation it is not possible to take costs for administration, advertising or credit monitoring into account. It is also not possible to consider the costs of servicing credit applications in the event where credit was not granted. This could include, for example, the costs of reports from the Credit Information Bureau, concerning information about clients, who did not receive credits.

4 Settlement of Transaction Costs and their Impact on Bank's Financial Result

Income from net fees charged to the customer, settled by the effective rate method, are considered in the bank's profit and loss account in the realm of the interest income. Considering the transaction costs during calculating the effective interest rate reduces operational costs in the current reporting period and leads to changing the structure of the bank's loss and profit account. These costs are collated to the financial result for the period until maturity of the loan, not when they are incurred. Fee income is also a subject to postponement in time, which does not constitute a viable solution. In accordance with the rule of commensurability of revenues and costs, as well as with the accrual principles of accounting, Polish banks were obligated to settle commissions in time, using the flat rate method.

The example presented below, illustrates the effects of the change in legislation, which has been applied to valuating credits after 1 January 2005, making it possible to take into account transaction cost in those valuations.

Example:

The bank grants ten 4-year credits at 100,000 zł each with a 12% interest rate. Charged commissions are 2% of the credit, while transaction costs concerned:

- entries to the mortgage: $10 \times 200 \text{ zł} = 2000 \text{ zł}$
- reports from the Credit Information Bureau: $10 \times 50 \text{ zł} = 500 \text{ zł}$

Credits will be paid at different rates – capital and interest at 32,500 zł.

It is important to perform a measurement of loans at amortised cost on the balance sheet date. The effective calculated rate with the use of the IRR financial function is:

$$P_0 = \sum_{t=1}^n C_t (1+r_e)^{-t}$$

or

$$982,500 \text{ zł} = \sum_{t=1}^4 325000 (1+r_e)^{-t} \rightarrow r_e = 12.2240\%$$

The table below presents the calculation of the amortised cost.

Year	Amortised cost at the start of the year	Interest according to effective interest rate	Cash flows in the period	Measurement according to amortised cost at the end of the period
1	982 500	120 100,6	325 000	777 600,6
2	777 600,6	95 053,7	325 000	547 654,3
3	547 654,3	66 945,1	325 000	289 599,4
4	289 599,4	35 400,6	325 000	0

In case the transaction costs of carried out credit operations are not taken into account, the results would be as follows (effective interest rate was 12.3454%):

Year	Amortised cost at the start of the year	Interest according to effective interest rate	Cash flows in the period	Measurement according to amortised cost at the
1	980 000	120 985,1	325 000	775 985,1
2	775 985,1	95 798,59	325 000	546 783,7
3	546 783,7	67 502,72	325 000	289 286,4
4	289 286,4	35 713,61	325 000	0

From the calculations carried out in the table above, it turns out that, taking transaction costs into account when valuating credits means that operating costs during the first reporting period would be lower by 2,500 zł, and revenues from the bank operations would be reduced by approximately 885 zł (120 985,1-120 100,6), whereas the gross financial result from that time would increase by 1,620 zł (2500 - 884,5). This way the transaction costs are delayed, influencing subsequent reporting periods over the credit's lifetime. Changes in the bank's balance sheet structure will therefore be significant for a corresponding large amount of granted credits.

5 Conclusion

In conclusion, when considering the measurement of credits, it is important to point out the significance of transaction costs' catalogue used by banks to calculate an effective interest rate. This in particular concerns retail banks, which have significant amount of credit deals in their portfolios. For example, a precise assignment of an employee bonus to a concrete agreement for having sold the credit, will allow banks to lower the payroll costs and to improve the employment performance indicators.

A reliable assessment of some of the banks' operating costs as marginal ones to conclude credit agreements is not always, however, an easy task. Incurred general-administration costs, for example, can come under scrutiny for their transaction nature,

(e.g. the costs of printing the credit agreements or producing credit cards). We must remember, however, that the guidelines published in IAS 39 exclude the possibility of taking administrative credit costs into account.

Unauthorised (mistaken) classification of a bank's operating costs as its main operational transaction costs, considered in the credit valuations, could lead to their postponement for an extended period of time, such as in the case of mortgages and could cause unwarranted overpricing of the bank's current profits.

It may appear that a precise definition in the domestic regulations, of what the catalogue of external, and particularly internal transaction costs for lending activities, should be, would help to clarify the doubts in recognition and classification. Beyond that, in practice it would allow restriction of possible unauthorised flipping of costs between the bank operating segments in order to improve their profitability.

Dr. Edward Pielichaty

Pomen transakcijskih stroškov na področju merjenja bilance kreditnih obveznosti

V zadnjih letih je bančni sektor na Poljskem doživel številne pomembne spremembe na področju merjenja obveznosti iz naslova kreditov, posojil in vrednostnih papirjev, zaradi pozicije le-teh v bančnih sredstvih. Nova uredba v poljski zakonodaji na področju finančnega računovodstva ter nova pravila glede finančnih poročil v mednarodnih standardih, veljavnih od leta 2005, predstavljajo novo amortizirano stroškovno metodo z efektivno obrestno mero za merjenje kreditnih in ostalih obveznosti.

Prispevek obravnava problem vključevanja transakcijskih stroškov v merjenje kreditov in zlasti poudarja vpliv izbrisa transakcijskih stroškov na končne finančne rezultate bank.

*Definicija transakcijskih stroškov se je v ekonomiji pojavila že leta 1930, predvsem zaradi ekonomista Ronalda Coaseja, ki je leta 1937 objavil prispevek z naslovom *The Nature of the Firm* (Narava družbe). Ta se pogosto šteje za začetek nove institucionalne ekonomije, ki predstavlja poskus spremeniti in razširiti neoklasično ekonomijo. Ta novi tok v ekonomiji sprejema glavne neoklasične postulate, vendar zavrača instrumentalno obravnavanje racionalnosti kot mehanizma za učinkovito in neomejeno poslovanje, s polnim dostopom do informacij. Coase (1937) je trdil, da različne vrste stroškov spremljajo vsako transakcijo, s katero potem skupaj ustrezata sili trenja v fizičnem sistemu.*

Transakcijski stroški pomenijo zelo pomembno in še ne povsem raziskano področje ekonomije. Njihov pojav lahko pripišemo nepopolnim informacijam kot tudi omejenemu znanju zaposlenih in napakam pri delu. Transakcijski stroški se pojavljajo na ravni trga (trenje tržnih sil) in v poslovanju kot vodstveni stroški.

Dobesedna razlaga izraza »stroški transakcije« kaže na to, da med pripravo, uvajanjem in izvršitvijo tržnih transakcij poleg stroškov iskanja, pogajanj in nadzora nastajajo tudi stroški izgube. Coase je poudarjal, da imajo transakcijski stroški relativno majhno vlogo pri razvoju strogih ekonomskih modelov, zato so teorije daleč od ekonomskega vedenja oz. prakse. Znatni delež ekonomskih teorij se vede, kot da transakcijski stroški ne obstajajo, ne glede na dejstvo, da je v praksi njihova vrednost vedno pozitivna.

Medtem ko se Coasejevi postulati slišijo kot popolnoma utemeljeni, je treba poudariti, da standardizacija transakcijskih stroškov predstavlja številne težave (navadno obstaja dodatni strošek, ki pred tem ni bil upoštevan – marginalni strošek). Težava pri ugotavljanju te kategorije stroškov je še posebej problematična. Zaradi dejstva, da je v praksi vsaka pogodba nepopolna in zato lahko podjetja pričakujejo oportunistično vedenje svojih poslovnih partnerjev, se morajo pripraviti na obvladovanje stroškov, ki spremljajo nepredvidene dogodke. Verjetnost takih dogodkov je odvisna izključno od moralnih ciljev transakcije, ki jih pa ni mogoče količinsko opredeliti.

Pomembno je, da nam Coasejevi pogledi omogočajo boljše razumeti logiko uvajanja koristnih institucionalnih rešitev, če imamo pregleden in učinkovit pravni sistem. Te rešitve imajo zelo močno podlago, ker omilijo učinke trenj gospodarskih sil - tržnih nepopolnosti v vsakem gospodarskem sistemu, kjer se pojavljajo transakcijski stroški. Če povzamemo: dobre institucionalne rešitve omogočajo nemoteno izvajanje pogodb in zmanjšanje nepotrebni stroškov, kljub očitnim težavam, izraženim v denarju.

Problem kvantifikacije in vključitve transakcijskih stroškov se je pojavil tudi v računovodstvu finančnih instrumentov. Ocene nekaterih, z uporabo efektivne obrestne mere, nam omogočajo, da lahko upoštevamo transakcijske stroške, ki tako prilagodijo notranjo stopnjo donosa za finančni instrument. V skladu s smernicami (OS §13), objavljenimi v skladu z Mednarodnim računovodskim standardom (IAS) 39, se pristojbine in provizije, plačane agentom, svetovalcem, posrednikom, kakor tudi pristojbine, uvedene s strani regulativnih agencij ter borze, obravnavajo kot transakcijski stroški, povezani z izvajanjem pogodb za finančne instrumente. V tem okviru so zaposleni, ki so v vlogi zastopnikov finančnih instrumentov, hkrati tudi posredniki. Obenem pa pristojbine za premije ali popuste iz finančnih dolžniških instrumentov, financiranja stroškov, shranjevanja finančnih instrumentov ali upravni stroški ne veljajo za transakcijske stroške.

Omenjeni problem merjenja in prepoznavanja transakcijskih stroškov je pomemben predvsem za merjenje kreditnih operacij bank. Do konca leta 2004 so bila posojila v bilanci stanja zavedena v skladu z načeli nominalizma, vključno z obstoječimi odplačili in provizijami za tveganja. Obresti so bile izračunane po pogodbeni obrestni meri in provizije (ter druge pristojbine) so bile običajno obračunane le enkrat (v času izplačila posojila) in zbrane v izkazu poslovnega izida, tako prepoznane kot ločen del prihodkov banke.

Trenutno so krediti valorizirani po metodi amortizacijskih stroškov, pri čemer bi po najprej priznani nominalni vrednosti, morali biti prilagojeni za:

- vračila kapitala,
- amortizacijo razlike med začetno vrednostjo in vrednostjo ob zapadlosti, izračunano z uporabo efektivne obrestne mere,
- odpise zaradi izgube, privzetih stroškov ali provizij za tveganja.
- Transakcijski stroški so bili opredeljeni v §9 IAS 39 kot marginalni stroški, torej tisti, ki ne bi nastali, če ne bi prišlo do poslovne transakcije, in tisti, ki so neposredno vezani na določeno transakcijo. Transakcijski stroški zajemajo:
- zunanje stroške (kot so plačila in davki, povezani s poslovanjem) in
- obratovalne stroške (kot so plače zaposlenih), ki so neposredno vključeni v transakcijo.

Primeri zunanjih stroškov so lahko: stroški merjenja ali stroški zaradi zagotavljanja vračila kredita, stroški storitev, ki jih opravljajo pisarne za informiranje o kreditih, stroški plačil kreditnim posrednikom ali pa stroški zavarovanja kreditov. Provizije, plačane zaposlenim, ki kredite tržijo, se lahko tudi razvrstijo med operativne stroške pod pogojem, da so dodeljeni k specifičnemu kreditnemu dogovoru. Pri izračunu efektivne obrestne mere ni mogoče upoštevati stroškov za upravo, oglaševanje ali nadzor kreditiranja.

Skratka, če upoštevamo merjenje kreditov, je pomembno izpostaviti pomen kataloga transakcijskih stroškov, ki ga uporabljajo banke pri izračunavanju efektivne obrestne mere. To velja zlasti za podjetnike, ki imajo veliko količino kreditnih poslov v svojih portfeljih. Na primer, z natančno dodelitvijo bonusa v konkretni pogodbi za sklenjen kredit zaposlenemu, bodo banke lahko znižale stroške plač in s tem izboljšale kazalnike uspešnosti.

Zanesljivo ocenjevanje nekaterih operativnih stroškov bank za sklepanje kreditov, ki delujejo kot marginalni, ni vedno lahka naloga. Stroški upravljanja, na primer, lahko pristanejo pod drobnogledom zaradi narave transakcije (na primer stroški tiskanja kreditne pogodbe ali izdelava kreditne kartice). Moramo vedeti, da smernice, ki so objavljene v IAS 39, izključujejo možnost upoštevanja upravljalnih stroškov kredita.

Nedovoljeno (napačno) razporejanje obratovalnih stroškov banke kot glavnih operativnih transakcijskih stroškov, všteti v valorizacije kreditov, lahko privede do odloga le-teh za daljši čas, kot se že dogaja na primer pri hipotekah, kar bi lahko povzročilo neupravičene precenitve trenutnih dobičkov banke. Zdi se, da bi natančna opredelitev, kaj je pravzaprav katalog zunanjih, in zlasti notranjih transakcijskih stroškov za posojilne dejavnosti v domačih predpisih pomagala razjasniti dvome glede priznavanja in razvrstitve. Še več, v praksi bi omogočila omejitev nedovoljenega prerazporejanja stroškov med poslovnimi oddelki banke z namenom prikaza večje donosnosti.

LITERATURE

1. Bakalarski, T. (2003). Wycena za pomocą skorygowanej ceny nabycia. Rachunkowość, No 1.
2. Bieniowski, J. (2002). Instrumenty finansowe i efektywna stopa procentowa. Bank, no. 10.
3. Coase, R. (1937). The nature of the firm. *Economica*, No. 4, pp. 386–405.

4. Marcinkowska, M. (2002). Skorygowana cena nabycia – nowa kategoria ceny. *Rachunkowość*, no. 10.
5. Międzynarodowe Standardy Sprawozdawczości Finansowej (MSSF) (International Financial Reporting Standards (IFRSs)), IASB - SKwP, Londyn 2011.
6. Pielichaty, E. (2006). Wycena należności kredytowych w świetle regulacji krajowych i Międzynarodowych Standardów Rachunkowości w: *Standardy rachunkowości wobec wyzwań współczesnej gospodarki* pod red. Z. Messnera, t. II, PN AE Katowice, pp. 357–368.
7. Rozporządzenie MF w sprawie szczegółowych zasad uznawania, metod wyceny, zakresu ujawniania i sposobu prezentacji instrumentów finansowych z dnia 12. 12. 2001, Dz. U. z 22. grudnia 2001 r. nr 149, poz. 1674 ze zm.
8. Ustawa o rachunkowości, Dz. U. nr. 121 z 29. września 1994 ze zm.