

CALCULATION OF FINANCIAL INDICATORS IN A SINGLE-ENTRY ACCOUNTING SYSTEM

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Abstract. *The company's accounting data are a base for the analysis of its business performance. As provided by the legislation, the company can choose whether the accountancy is maintained in a single-entry or in a double-entry system. Exploiting the financial analysis formulas, an economic performance analysis could be easily enough performed by the enterprises keeping their accounts in accordance with the accrual principle. If the accounting registers are kept in a single-entry system, data provided in the financial reports cannot be used to perform the analysis employing the formulas of the financial analysis. Currently, in Latvia, the single-entry accounting systems are commonly used by the farming enterprises. These businesses often apply for various funding, hence the analysis of diverse indicators is required, though it cannot be performed using the existing financial report data. The paper aims to identify the differences between a single-entry and a double-entry accounting systems, to explore opportunities to modify and to adjust the formulas calculating the financial indicators, so they can be used in a single-entry accounting system. As a result of the research, there has been developed a methodology that allows relating the cash-based accounting indicators with the accrual-based accounting indicators. Consequently, the appropriate information could be obtained for the economic performance analysis by the companies using the single-entry accounting system. Applied research methods: the monographic or descriptive research method as well as the synthesis method, the modelling and the document analysis method.*

Keywords: *accrual accounting, cash accounting, financial analysis*

JEL Code: *M41, G33, G39.*

Introduction

Financial analysts have reviewed the issues of financial analysis providing examples of different sectors. However, financial analyses from the point of view of a single-entry accounting system have not been extensively studied; financial analysis techniques for the users of a single-entry accounting system have not been developed so far, thus ignoring this type of the accounting system and its users.

Funding the company that uses a single-entry accounting system, for instance, within the framework of a project, the investor cannot be sure

whether the money invested will pay off and the company itself will be a sustainable undertaking. In order to timely detect the threat of insolvency and to respond to a possible problem, each entrepreneur shall follow the variations in the company's financial indicators and shall be able to make informed financial decisions in a timely manner.

The paper aims to explore the differences between a single-entry and a double-entry accounting systems and to discover opportunities to modify and to adjust the formulas calculating financial indicators, so they can be used in a single-entry accounting system.

The following tasks are set to achieve the objective:

- 1) To explore the formulas for the calculation of the financial indicators and to identify differences between a single-entry and a double-entry accounting systems;
- 2) To identify advantages and disadvantages of each accounting system;
- 3) To describe the formulas exploited in the calculation of the financial indicators;
- 4) To adjust the existing calculation formulas of financial indicators to be used in a single-entry accounting system;
- 5) To draw conclusions and to elaborate suggestions on the adjustment of the financial indicators calculation formulas to be used in a single-entry accounting system.

Applied research methods: monographic or descriptive research method and the synthesis method; the modelling method; the document analysis method.

Hypothesis: Adjustment of data of single-entry accounting system makes it possible to obtain valuable information necessary to perform the economic analysis based on the general methods of analysis.

The legal regulations of the Republic of Latvia and specialized literature have been used in the research.

Research into the legal regulation

The Law "On Accounting" stipulates that all companies that are registered in the Republic of Latvia, regardless of their form of the economic operations, shall keep the accounting registers using the double-entry system. The law envisages that, in accordance with the Cabinet Regulations, the accounting registers could be kept using a single-entry system by individual merchants, individual enterprises, farming and fishing enterprises the turnover (income) of which from the economic transactions during the previous accounting year does not exceed EUR 300 000, and other natural persons who perform economic activities.

Table 1 Legislative and regulatory framework regulating the accounting organization for the system of single-entry accounting and the system of double-entry accounting
(Compiled by the authors)

<i>Single-entry system</i>	<i>Double-entry system</i>
Law <i>On accounting</i> , adopted on October 10, 1992, with amendments	
The Cabinet Regulations No.585 , adopted on October 21, 2003 <i>Regulations on the conduct and organization of accounting</i>	
The Cabinet Regulations No.584 , adopted on October 21, 2009 <i>Regulations regarding accounting of cash-office operations</i>	
The Cabinet Regulations No.282 , adopted on May 02, 2007 <i>Procedures for using electronic devices and equipment for registration of taxes and other payments</i>	
The Cabinet Regulations No.188 , adopted on May 08, 2007 <i>Procedures for organization of single-entry accounting system for individual merchants, individual enterprises, farming and fishing enterprises, and other natural persons performing economic activities</i>	
Guidance material on filling in <i>The Journal of incomes and expenditures of the economic activities</i>	<i>International accounting standards</i>
The Cabinet Regulations No.301 , adopted on March 20, 2007 <i>Regulations on the financial accounts of individual merchants</i>	<i>Annual Accounts Law</i> with amendments to October 19, 2006
Methodological guidelines and letters by the State Revenue Service	
Other legal regulations on the accounting and annual reporting of economic activities	

The information summarised in Table 1 allows concluding that the basic requirements for the organization of the single-entry and double-entry accounting systems are governed by the same legal regulations. Nonetheless, the difference between both accounting systems is fundamental: the cash-basis accounting is used in the single-entry system; the accrual-based accounting is used in double-entry system. The essential is the difference in the preparation of annual reports: *The Annual Accounts Law* and accounting standards, which are not binding for the single-entry system, are employed in the double-entry system.

Aspects of the accounting

Single-entry accounting is a simplified register of the economic operations that could be carried out by the entrepreneur without professional knowledge in the field of accounting. The data registered in a single-entry system are mainly intended for the tax calculation and preparation of the tax declaration. In the single-entry accounting system, the cash-basis accounting principle is used providing that revenues shall be registered at the moment when a payment for the transaction is received, but the expenses – when they are paid. (*Leibus, 2006*)

The double-entry accounting system stipulates that every transaction using the account system shall be reflected in at least two accounts – one account in debit, the other account in credit – in compliance with the chart of accounts used by the company and the correspondence between the economic transaction and relevant accounts. The companies maintaining the accounting in the double-entry system use the accrual-basis accounting principle, which requires registering revenues at the moment the sales of goods, provision of services have occurred, even if the payment is not received at the time of the transaction. While the expenses are requested to be registered in the period these costs relate to. Nonetheless, the difference of both accounting systems is fundamental: the cash-basis accounting principle is used in a single-entry system; the accrual-based accounting principle is used in a double-entry system. The essential is the difference in preparation of annual statements. *The Annual Accounts Law* and the accounting standards that are not binding for the single-entry system are used in the double-entry system.

The company's annual report structure and the volume depend on the type of the income tax and, consequently, on the type of the accounting system that is exploited by the entrepreneur. Personal income tax payers keep accounting registers in the simple-entry system and submit the annual declaration of income. The company's income tax payers keep accounting registers in the double-entry system and submit the annual report in full.

The financial analysis indicators necessary for the single-entry system users can be obtained from the annual income declaration, the journal of incomes and expenditures of economic operations, analytical registries of receivables, payables, and fixed assets, as well as lists of inventories. There is no one single document where all the necessary information for the single-entry system users would be included.

The financial analysis indicators necessary for the double-entry system users are found in the annual report's balance sheet and the profit and loss account. Maintaining the accounting registers, all the

information required for the financial analysis is obtained, systematized, and compiled in the financial statement.

The main difference between the cash-basis principle and the accrual-basis principle is a moment of the recognition of revenues and expenses. Net turnover differences in the single-entry and double-entry accounting in a form of correspondence of accounts are reflected in Table 2.

Table 2 Adjustment of the correspondence of revenues and expenses accounts in accordance with the cash-basis principle and accrual-basis principle
(Compiled by the authors)

Type of entry	Accrual-basis principle	Cash-basis principle
Invoice for debtors issued	<ul style="list-style-type: none"> • Debit "Accounts receivable" • Credit "Revenues" • Credit "VAT payable" if the company is registered as a VAT payer 	<ul style="list-style-type: none"> • Debit "Accounts receivable" • Credit "Deferred revenue" • Credit "VAT payable" if the company is registered as a VAT payer
Debtors' invoice paid	<ul style="list-style-type: none"> • Debit "Cash" • Credit "Accounts receivable" 	<ul style="list-style-type: none"> • Debit "Cash" • Credit "Accounts receivable"
		Adjusting the entries: <ul style="list-style-type: none"> • Debit "Deferred revenue" • Credit "Revenue"
Suppliers' invoice received	<ul style="list-style-type: none"> • Debit "Expenses" • Debit "VAT payable" • Credit "Accounts payable" 	<ul style="list-style-type: none"> • Debit "Prepaid expenses" • Debit "VAT payable" • Credit "Accounts payable"
Creditors' invoice paid	<ul style="list-style-type: none"> • Debit "Accounts payable"; • Credit "Cash" 	<ul style="list-style-type: none"> • Debit "Accounts payable"; • Credit "Cash"
		Adjusting the entries: <ul style="list-style-type: none"> • Debit "Expenses" • Credit "Prepaid income"

As reflected in Table 2, the cash-basis accounting principle users recognize the revenues and expenses at the moment the invoice is paid or the payment is received. In contrast, the accrual basis accounting principle users recognize the revenues and expenses at the moment the transaction is concluded and the invoice is issued. In accordance with Table 2, the accounts receivable and the accounts payable occur at the same time in both accounting systems – when the invoice is issued or received, and the debt is extinguished at the time of payment. Similarly, the cash generation is recognized in the same way in both accounting systems. The difference between the recognition of the revenues and

expenses that is set by the cash-basis and accrual-basis accounting principles may affect the company's profit.

Modelling the accounting information

Registering accounts in accordance with the accrual-basis principle, the revenues and expenses are recognized at the actual time they have incurred. Using the cash-basis principle, the revenues are recognized when incurred at the time of payment, hence, if the payment of the invoice issued at the end of the year is not made in the reporting year, it will reduce the profit of the reporting year, while, made in the next reporting year, when the payment is received, thus increasing the profit. This type of the revenue and expense recognition complicates the accounting process; additional adjustment of the entries shall be carried out, though, even that does not reflect a clear picture of the revenue and expenditure formation in the reporting year. VAT payers have different profits in accordance to the fact whether the cash-basis principle or the accrual-basis principle is used. In case the single-entry accounting system users have chosen a special VAT payment and deduction procedure, the VAT payments are recognized simultaneously with the recognition of the revenues and expenses. In case the single-entry system users have not selected a special VAT payment method and special calculation procedures, the VAT calculated will be analogous as the one using the accrual-basis principle.

Taking into account that both principles of recognition of the revenues and expenses admit incurring of the receivables and payables at the same moment, i.e. when the invoice is issued, the companies keeping accounting records in the single-entry system in accordance with the cash-basis principle, are able to specify the revenues and expenses of the accounting year that are requested for the financial analysis. Making corrections with respect to the accounts receivable and the accounts payable, adjusting them to the accrual-basis principle, it is possible to identify the correct annual turnover. (Generated by the authors)

$$\begin{array}{ccccccc} \text{Net turnover} & & \text{Revenues} & & \text{Receivables at} & & \text{Receivables at} \\ \text{in a single-entry} & = & \text{of the} & - & \text{the beginning} & + & \text{the end of} \\ \text{accounting} & & \text{accounting} & & \text{of the} & & \text{the accounting} \\ & & \text{period} & & \text{accounting} & & \text{year} \\ & & & & \text{year} & & \end{array} \quad (1)$$

Likewise, the operating expenses are adjusted in the single-entry system, so the indicators can be used for the analysis of economic activities.

$$\begin{array}{ccccccc} \text{Operating} & & \text{Expenses} & & \text{Payables at the} & & \text{Payables at the} \\ \text{expenses} & & \text{of the} & & \text{beginning of} & & \text{end of} \\ \text{in a single-entry} & = & \text{accounting} & - & \text{the accounting} & + & \text{the accounting} \\ \text{accounting} & & \text{period} & & \text{year} & & \text{year} \end{array} \quad (2)$$

On the basis of the specified formulas of the revenues (net turnover) and expenses, it is possible to further specify the other formulas and to compute financial indicators, financial ratios in a single-entry system.

Turnover ratios describe how many times the assets at the company's disposal have circulated in a certain period of time. (*Arbidāne, 2009*)

Company's inventory turnover ratio characterizes the efficiency of use of the company's resources, and indicates how many times a full turnover incurs within a specified time period. According to some economists, the ratio should not equal less than three.

To determine an inventory turnover period, the single-entry accounting users shall perform an inventory at the end of each reporting year. The value of the inventory purchased and sold during the year shall be reflected on the inventory list. The single-entry accounting system users can compute the total inventory turnover ratio using Formula 3. (Generated by the authors)

$$\begin{array}{ccccccc} \text{Total} & & \text{Revenues} & - & \text{Receivables at} & & \text{Receivables at} \\ \text{inventory} & & & & \text{the beginning of} & + & \text{the end of the} \\ \text{turnover ratio} & = & & & \text{the year} & & \text{year} \end{array} \quad (3)$$

Average inventory balance

Assets turnover ratio indicates how efficiently the company's assets are used. To calculate the assets turnover ratio, the single-entry system users shall specify revenues generated by the economic operations and obtain the specified net turnover. On the basis of the inventory lists, the registers of the accounts receivable, and fixed assets' records, the company's assets shall be calculated. In accordance with the Law on Accounting, the company's assets include a residual value of the fixed assets, stocks, including work animals and food-producing animals, accounts receivable, prepaid expenses and cash. The assets turnover ratio for the single-entry system users is reflected in Formula 4. (Generated by the authors)

$$\begin{array}{ccccccc} \text{Assets} & & \text{Revenues} & - & \text{Receivables at the} & & \text{Receivables at} \\ \text{turnover} & & & & \text{beginning of the} & + & \text{the end of the} \\ \text{ratio} & = & & & \text{year} & & \text{year} \end{array} \quad (4)$$

Average sum of the fixed assets, stocks, receivables,
prepaid expenses, and cash

The single-entry system users can find a value of the current assets from the inventory list. To calculate the current assets in a single-entry accounting system, it is necessary to use inventory lists and the journal of the analytical records of the accounts receivable. The total current assets in a single-entry system will comprise purchased stocks, sowings, started buildings, own production, the value of food-producing and work animals, as well as the accounts receivable and cash value. The current assets turnover ratio calculation formula for the single-entry system users is reflected in Formula 5. (Generated by the authors)

$$\text{Current assets turnover ratio} = \frac{\text{Revenues} - \frac{\text{Receivables at the beginning of the year} + \text{Receivables at the end of the year}}{2}}{\text{Average sum of the stocks, receivables, prepaid expenses and cash}} \quad (5)$$

Receivables turnover ratio indicates how many times a year the accounts receivable turn into cash. The single-entry system users can calculate the receivables turnover ratio using Formula 6. (Generated by the authors)

$$\text{Receivables turnover ratio} = \frac{\text{Revenues} - \frac{\text{Receivables at the beginning of the year} + \text{Receivables at the end of the year}}{2}}{\text{Average value of the receivables}} \quad (6)$$

For the purpose of financial analysis, both receivables turnover ratio and payables turnover ratio are calculated all at once. **Payables turnover ratio** indicates how many turnover cycles are required for the company to settle with its liabilities. If the value of the payables turnover ratio is larger than the value of the receivables turnover ratio, it demonstrates the company's financial stability. (Mietule, 2013)

To calculate this ratio, the single-entry system users shall use the register of the accounts payable, the list of inventory, and the journal of incomes and expenditures of economic operations. The single-entry system users can calculate the costs according to Formula 2, while the payables turnover ratio – according to Formula 7. (Generated by the authors)

$$\text{Payables turnover ratio} = \frac{\text{Expenses} - \frac{\text{Payables at the beginning of the year} + \text{Payables at the end of the year}}{2}}{\text{Average value of the payables}} \quad (7)$$

As the result of the research, valuable formulas are obtained that could be used for the analysis of financial indicators applying them to the accounts that are maintained in the single-entry system.

Conclusions

Based on the research, the authors present a proposal for the financial analysts and the users of single-accounting system to use the methodology developed in the research and the adjusted financial calculation formulas for the purpose of the analysis in order to evaluate the financial stability of small companies.

Using this methodology, it is possible to compare the indicators received using the cash-basis principle to the indicators received using the accrual-basis principle, thus the correct data for the analysis of economic activities could be obtained. Hence, it allows the users of financial statements to use the data obtained in the single-entry accounting system in the following cases:

1. The opportunity to qualitatively assess the profitability of the company;
2. On basis of the results of financial analysis, to make conclusions about the indicators characterizing the turnover of debtors and creditors, as well as to forecast the cash flow;
3. Commercial institutions, investors, and institutions governing the acquisition of EU funds can make a more precise analysis of the financial status and the solvency of the loan recipients;
4. Entrepreneurs themselves can calculate the financial indicators for the analysis.

The hypothesis of the research was confirmed. The methodology was developed that can be used to adjust the main indicators of the single-entry accounting system to the double-entry system. To conclude, it can be stated that the adjustment of the single-entry accounting system data makes it possible to obtain valuable information necessary to perform the economic analysis based on the general methods of analysis.

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FINANŠU RĀDĪTĀJU APRĒĶINĀŠANAS IESPĒJAS VIENKĀRŠĀ IERAKSTA GRĀMATVEDĪBAS SISTĒMĀ

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Kopsavilkums

Finanšu analītiķi ir plaši aplūkojuši finanšu analīzes jautājumus, ar dažādu nozaru piemēriem. Par spīti tam, finanšu analīze no vienkāršā ieraksta grāmatvedības sistēmas viedokļa nav pietiekami plaši pētīta, līdz šim nav izstrādātas finanšu analīzes metodes vienkāršā ieraksta grāmatvedības sistēmas lietotājiem, tādējādi diskriminējot šo grāmatvedības sistēmu un tās lietotājus.

Raksta mērķis ir izpētīt atšķirības starp vienkāršā un divkāršā ieraksta grāmatvedību, izpētīt finanšu rādītāju aprēķina formulas pārveidošanas un piemērošanas iespējas vienkāršā ieraksta grāmatvedības sistēmā.

- 1) Izvirzītā mērķa sasniegšanai ir noteikti šādi uzdevumi:
- 2) Pamatojoties uz pieejamajiem literatūras avotiem izpētīt finanšu rādītāju aprēķina formulas un atšķirības starp vienkāršā un divkāršā ieraksta grāmatvedības veidiem;
- 3) Analizējot iegūtos datus, noteikt kādas priekšrocības un trūkumi ir katram grāmatvedības uzskaites veidam;
- 4) Raksturot finanšu rādītāju aprēķina formulas;
- 5) Pielāgot esošās finanšu rādītāju aprēķinu formulas vienkāršā ieraksta grāmatvedības sistēmai. Izdarīt secinājumus un priekšlikumus par finanšu rādītāju aprēķinu formulu pielāgošanu vienkāršā ieraksta grāmatvedības sistēmā.

Rakstā ir veikta finanšu rādītāju aprēķināšanas formulu pārveidošana un pielāgošana izmantošanai vienkāršā ieraksta sistēmā sagatavotajiem gada pārskatiem. Balstoties uz precizētajām ieņēmumu (neto apgrozījuma) un izdevumu formulām ir iespējams tālāk precizēt pārējās formulas un veikt finanšu rādītāju, finanšu koeficientu aprēķinus vienkāršā ieraksta sistēmā. Izmantojot šo metodiku,

kur rādītāji pēc kases principa tiek pielīdzināti uzkrāšanas principam, var iegūt korektu informāciju saimnieciskās darbības analīzei. Līdz ar to tas ļauj izmantot vienkāršajā ierakstā kārtotās grāmatvedības datus izmantot finanšu pārskatu lietotājiem šādos gadījumos:

1. Iespēju kvalitatīvi novērtēt uzņēmuma rentabilitāti;
2. Balstoties uz finanšu analīzes rezultātiem, secināt par debitoru, kreditoru apriti raksturojošiem rādītājiem, kā arī prognozēt naudas plūsmu;
3. Komercestādēm, investoriem, iestādēm, kas regulē ES finansējuma apgūšanu iespējams veikt precīzāku analīzi par aizņēmuma saņēmēja finansiālo stāvokli un maksātspēju;
4. Paši uzņēmēji varēs aprēķināt finanšu rādītājus analīzes nolūkā.

Atslēgas vārdi: *vienkāršā grāmatvedība, kases princips, finanšu analīze.*