

The Bookkeeping of Enterprising Natural Persons

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Abstract: *This paper deals with the form of bookkeeping that enterprising natural persons (individuals) use, and with searching of dependency between the form of bookkeeping and the field in which the enterprising natural person operates. From February to June 2015 there was a questionnaire survey conducted, which was attended by 749 respondents. The preference of particular forms of bookkeeping was revealed through the Friedman test. It has been found that the most common method of bookkeeping of enterprising natural persons are tax records, while a substantial proportion also has a double-entry bookkeeping. Surprisingly, the least used method is the simple evidence of income and subsequent determination of the income tax base of natural persons using lump-sum expenses. After the survey and statistical evaluation there was an argument within discussion on results that the lump-sum expenses have been currently used for tax optimization rather than for reduction of the administrative burden and thus, for the primary evidence purposes. As for the researched dependence between the form of bookkeeping and the selected business field, this dependence has been statistically validated by the test of independence. In the discussion of the results there are fields listed according to the most common form of bookkeeping.*

Key words: Bookkeeping · Enterprising natural persons · Tax records · Lump-sum expense · Field of activity · CZ-NACE

JEL Classification: M41

1 Introduction

In developed economies, small and medium enterprises (SME) represent nearly 90% of the total number of enterprises. The share of the group of this size in the gross national income is between 30 – 70%. (Synek, 2002) In the Czech Republic, the share of SME in the national economy is 99.81%. The share of natural persons in the SME is 86%. (Synek, 2002) Therefore, there is a very important component of so-called small businesses (Synek, 2002) consisting of an entrepreneur – a natural person. Sole proprietorship is the simplest legal form of business. These are low capital-intensive enterprises (Hrdý & Krechovská, 2013).

Entrepreneurs – natural persons in the Czech Republic have three options to deal with their bookkeeping.

- The first option is not to keep books at all, of course, under certain conditions (see below), and when calculating the tax liability, they can only use the total income minus so-called lump-sum expenses.
- The second option is to keep tax records.
- The third option is to keep a double-entry bookkeeping.

This benevolence of the state is to support the business activity by reducing administrative burdens.

The objective of this paper is to determine which form of bookkeeping enterprising natural person use and whether they generally prefer any form of bookkeeping.

Furthermore, the regression analysis of the form of bookkeeping for the areas of business activity, expressed by CZ-NACE activity codes, will be conducted.

Following the above objectives the following hypotheses have been formulated:

- H1: Enterprising natural persons do not prefer any form of bookkeeping.
- H2: There is no relationship between the form of bookkeeping and the CZ-NACE section of activities.

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1.1 Accounting systems

Historically, there have been three basic accounting systems: single-entry bookkeeping, cameral bookkeeping and double-entry bookkeeping. (Strouhal, 2012)

The single-entry bookkeeping is based on the monitoring of incomes and expenses of funds, which are recorded in the cash book. An economic result is recognized in this accounting system as the difference between incomes and expenses, and so the economic result is basically identical to the cash flow of the enterprise. Similar to the single-entry bookkeeping in the Czech Republic are so-called tax records, which focuses mainly on tax revenues and tax expenditures. (Strouhal, 2012)

Tax records are primarily records of the taxpayer's incomes and expenses within his business activity. In addition to the monitoring of incomes and expenses in chronological order, tax records include the evidence of tangible (and intangible) assets, receivables and payables, as well as creation of necessary reserves for repairs of tangible assets. (Vančurová & Láchová, 2009)

The cameral bookkeeping is a specific historical form of bookkeeping used in organizations and public authorities. It monitors incomes and expenses of these entities. (Strouhal, 2012)

The double-entry bookkeeping is based on the capture of accounting information by double-entry method. The property is viewed both in terms of the form, and in terms of sources of its coverage. (Strouhal, 2012)

The amendment to Act no. 563/2001 Coll. effective since January 1st, 2004 canceled the single-entry bookkeeping and implemented the term „bookkeeping“, which refers only to the double-entry bookkeeping. (Kovanicová, 2008)

In order to distinguish the double-entry bookkeeping from the general concept of bookkeeping (such as management of business operations), we will continue to use the term double-entry bookkeeping in this paper.

The obligation to keep the double-entry bookkeeping applies to legal persons based in the Czech Republic, foreign legal persons doing business in the Czech Republic and to natural persons (domestic and foreign), who are accounting units. They are: (Ryneš, 2013)

- a) natural persons registered in the commercial register,
- b) natural persons whose turnover according to the VAT Act exceeded the amount of 25 mil CZK in the immediately preceding calendar year,
- c) natural persons who keep double-entry bookkeeping at their sole discretion,
- d) natural persons who are members of associations without legal personality,
- e) other natural persons who have an obligation to keep books imposed by special legislation.

1.2 Evidence and taxation of incomes from natural persons

Incomes from business and other self-employment are one of the partial income tax bases of natural persons. (Vančurová & Láchová, 2009)

Incomes of individuals are taxed by personal income tax (PIT) as part of the partial tax base no. 2 from business and other self-employment pursuant to the Act no. 586/1992 Coll., on income taxes, § 7. (Hrdý & Krechovská, 2013)

Business incomes are incomes from such activities carried out by the entrepreneur in his own name and for his own account. (Vančurová & Láchová, 2009) These are: incomes from agricultural production, incomes from trade and incomes from other business under a special law, e.g. doctors, lawyers, auditors, tax advisers, etc. As business income we consider also the profit share of a partner of a general partnership and of a general partner of a limited partnership.

A taxpayer reduces business incomes by expenses spent for achieving, securing and maintaining the incomes. He may decide to account the expenses. Then, to be able to determine the partial tax base, he keeps books or tax records. (Vančurová, Láchová, 2009)

An enterprising natural person for determining the tax base from business must: (Křemen, 2014)

- a) take records of achieved incomes and incurred expenses or
- b) keep books and tax achieved economic result or
- c) determine the expenses using so-called lump-sum expenses.

The lump-sum expenses are very popular and common way of determining costs or expenses of the enterprising natural person. They are the expenses determined by a percentage from achieved taxable incomes. (Hnátek & Zámeck, 2010)

Based on the law on income tax, an amount of lump-sum expenses differs for particular types of activities. An entrepreneur in agricultural production, forestry and water management can apply the lump-sum expenses at 80% of incomes, the same percentage can apply a tradesman if he has income from a craft business. In case of a non-craft business, the lump-sum expense is 60% of incomes. Other enterprising natural persons can apply the lump-sum expenses at 40% of their taxable incomes. (Hnátek & Zámeck, 2010)

The lump-sum expenses can be applied by a taxpayer even in the case he keeps books as an entrepreneur. Then, he taxes incomes according to his bookkeeping and as expenses he applies the lump-sum expenses as a percentage of incomes, not revenues. Thus, he is based upon the application of the lump-sum expenses taken from income records received from 1.1. to 31.12. of the tax year, including received advance payments. (Hnátek & Zámeck, 2010)

This method of determining the tax base has already been strictly targeted at tax optimization and the partial aim of this paper is to determine whether this kind of misuse has been really applied in practice.

2 Methods

In order to collect data, there was a questionnaire survey conducted from February 2015 to June 2015, financial period 2014. The respondents were enterprising natural persons not registered in the commercial register, whose turnover has not exceeded 25 mil. CZK. i.e. those who can make decisions on which form of bookkeeping they use. A total of 759 respondents participated, 10 of whom were excluded due to inconsistent information. The respondents should provide their names, address, company number, their core business field and the form of bookkeeping.

The data were then entered and processed in Excel and Statistica. Fields of activity were given two-digit CZ-NACE code, and during the subsequent statistical processing activities were summarized by designations of sections A-S.

Hypothesis H1: The enterprising natural persons do not prefer any form of bookkeeping was tested through a statistical non-parametric Friedman test.

Friedman test verifies that the random variables $Y_{i1}, Y_{i2}, \dots, Y_{ik}$ (in this case, various forms of bookkeeping Y_{i1}, Y_{i2} and Y_{i3} are identical). The test criterion is a random variable (Kubanová, 2004):

$$Q = \frac{12}{IJ(J+1)} \sum_{j=1}^J (\sum_{i=1}^I R_{ij})^2 - 3I(J+1) \quad (1)$$

wherein:

I is the number of respondents (749),

J is the number of characters – classes (3),

R_{ij} is the order. (The selected form of bookkeeping has order 1, the other two have order 2.5).

The critical area is expressed as:

$$W = \{Q: Q > \chi^2_{2, J-1, \alpha}\} \quad (2)$$

For $I = \infty$ and $J = 3$ the value of the critical area is 5.99. (Linda, 2006)

Hypothesis H2: There is no relationship between the form of bookkeeping and the CZ-NACE section of activities was verified by a statistical test of independence.

The test of independence verifies that the random variables X and Y are independent. The random variable X is the form of bookkeeping, the random variable Y is the section of activities by CZ-NACE. The test of independence has been carried out in three steps. The first step is to calculate the marginal frequencies, i.e. to create totals of rows and totals of columns.

The second step is to calculate the theoretical frequencies: (Linda, 2006)

$$\frac{n_{i \cdot} \cdot n_{\cdot j}}{n} \quad (3)$$

wherein

$n_{i \cdot}$ is the sum of the i -th row,

$n_{\cdot j}$ is the sum of the j -th column,

n is the total number (749).

The third step is to calculate the values for each pair of indices i, j (Kubanová, 2004):

$$\frac{(n_{ij} - \frac{n_i \cdot n_j}{n})^2}{\frac{n_i \cdot n_j}{n}} \quad (4)$$

wherein:

n_{ij} is the value of the i -th row and j -th column,

n_i is the sum of the i -th row,

n_j is the sum of the j -th column,

n is the total number (749).

The test criterion has the form (Kubanová, 2004):

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - \frac{n_i \cdot n_j}{n})^2}{\frac{n_i \cdot n_j}{n}} \quad (5)$$

wherein:

r is the number of rows (749),

s is the number of columns (3),

n_{ij} is the value of the i -th row and j -th column,

n_i is the sum of the i -th row,

n_j is the sum of the j -th column,

n is the total number (749).

Critical thresholds $\chi^2_{\alpha, (r-1)(s-1)}$ are presented in statistical tables, e.g. Linda, (2006).

3 Research results

As already mentioned, the main objective of this paper was to determine which form of bookkeeping is most frequently used by enterprising natural persons.

This analysis was compiled in Table 1. It contains particular sections of CZ-NACE (CZSO, 2014) activities and answers about the forms of bookkeeping used by the relevant enterprising natural person. There are three missing sections O – Public administration and defense; compulsory social security, Section T - Activities of households as employers; activities of households producing undifferentiated goods and services for their own use and Section U – Activities of extraterritorial organizations and bodies, since there was no respondent from any of these sections.

The table includes the totals of respondents by given sections in order to make it clear how many respondents from given sections participated in the questionnaire survey.

The most important result of this analysis shows the last row of the Table 1. It clearly shows the representation of the various forms of bookkeeping. The most common form of bookkeeping for natural persons is the tax records. It is kept by 321 persons of the total number of 749, which is 43%. The second most common form is the double-entry bookkeeping, which is kept by 34% of respondents (that means 258 of 759). The least used option for natural persons is the option to not keep books at all and record only their incomes (22% of respondents, that means 170 of 759).

Table 1 The analysis of the form of bookkeeping that enterprising natural persons use

Section CZ-NACE	Records of income	Tax records	Double-entry bookkeeping	Together
A – Agriculture, forestry and fisheries	18	31	16	65
B – Mining and quarrying	0	0	1	1
C – Manufacturing	16	46	32	94
D – Electricity, gas, steam and air conditioning	2	3	5	10
E – Water supply, activities sewerage, waste management	0	2	0	2
F – Construction	25	61	38	124

G – Wholesale and retail trade, repair of vehicles	23	49	51	123
H – Transportation and storage	2	10	20	32
I – Accommodation and food service	8	21	23	52
J – Information and communication	3	5	1	9
K – Financial and insurance	17	11	12	40
L – Real estate activities	2	4	1	7
M – Professional, scientific and technical activities	17	24	27	68
N – Administrative and support activities	10	10	4	24
P – Education	1	5	3	9
Q – Human health and social care	1	2	6	9
R – Arts, entertainment and recreation	4	7	3	14
S – Other activities	21	30	15	66
Together	170	321	258	749

Source: Own processing

Given that none of these forms of bookkeeping is negligible (the proportions represented 22% - 34% - 43%), it is necessary to perform a statistical test where these preferences would be tested in terms of their significance.

The hypothesis H1 has been tested using Friedman test (1) (2): Enterprising natural persons do not prefer any form of bookkeeping. (see Figure 1)

Figure 1 Calculation of the Friedman test in Statistica

Variable	Friedman's test ANOVA chi-kv. (N = 749, sv = 2) = 46,08011 p = ,00000 C = ,03076 r = ,02947			
	Average order	Sum of order Rij	Average	Standard deviation
not to conduct accounting	2,159546	1617,500	2,159546	0,628729
tax records	1,857143	1391,000	1,857143	0,742804
double - entry bookkeeping	1,983311	1485,500	1,983311	0,713264

Source: Own processing

$$Q = \frac{12}{3 * 749 (3 + 1)} (1617,5^2 + 1391^2 + 1485,5^2) - 3 * 749(3 + 1) = 135372$$

The value of the test criterion fell into the critical area. H1 hypothesis was rejected. It means that statistically there is a preference in the selection of the form of bookkeeping.

Subsequently, it has been examined whether the selected form of bookkeeping relates to the section of activities, for example if there are any fields of activity where enterprising natural persons choose the double-entry bookkeeping and any fields of activity where they prefer the lump-sum expenses, record only their incomes and thus eliminate administrative burden.

Therefore, the hypothesis H2 has been tested: There is no relationship between the form of bookkeeping and the CZ-NACE section of activities.

Testing was carried out using the test of independence (5). Its calculation was based on Table 1, based on which, the theoretical frequencies were calculated (3) see Table 2.

Table 2 Calculation of the theoretical frequencies

Section CZ-NACE	Records of income	Tax records	Double-entry bookkeeping
A – Agriculture, forestry and fisheries	14.75300401	27.85714	22.38985
B – Mining and quarrying	0.226969292	0.428571	0.344459
C – Manufacturing	21.33511348	40.28571	32.37917
D – Electricity, gas, steam and air conditioning	2.269692924	4.285714	3.444593
E – Water supply, activities sewerage, waste management	0.453938585	0.857143	0.688919
F – Construction	28.14419226	53.14286	42.71295
G – Wholesale and retail trade, repair of vehicles	27.91722296	52.71429	42.36849
H – Transportation and storage	7.263017356	13.71429	11.0227
I – Accommodation and food service	11.8024032	22.28571	17.91188
J – Information and communication	2.042723632	3.857143	3.100134
K – Financial and insurance	9.078771696	17.14286	13.77837
L – Real estate activities	1.588785047	3	2.411215
M – Professional, scientific and technical activities	15.43391188	29.14286	23.42323
N – Administrative and support activities	5.447263017	10.28571	8.267023
P – Education	2.042723632	3.857143	3.100134
Q – Human health and social care	2.042723632	3.857143	3.100134
R – Arts, entertainment and recreation	3.177570093	6	4.82243
S – Other activities	14.9799733	28.28571	22.73431

Source: Own processing

In the third step, the values according to the relationship (4) have been calculated, see Table 3.

Table 3 Calculation of the values for the test criterion

Section CZ-NACE	Records of income	Tax records	Double-entry bookkeeping
A – Agriculture, forestry and fisheries	0.714632965	0.354579	1.823604
B – Mining and quarrying	0.226969292	0.428571	1.24756
C – Manufacturing	1.334112233	0.810537	0.00444
D – Electricity, gas, steam and air conditioning	0.032045865	0.385714	0.702345
E – Water supply, activities sewerage, waste management	0.453938585	1.52381	0.688919
F – Construction	0.351260568	1.161674	0.520027
G – Wholesale and retail trade, repair of vehicles	0.8660991	0.261711	1.758452
H – Transportation and storage	3.813752651	1.005952	7.311457
I – Accommodation and food service	1.225027639	0.074176	1.44535
J – Information and communication	0.448605984	0.338624	1.4227
K – Financial and insurance	6.911271696	2.20119	0.229534
L – Real estate activities	0.106432106	0.333333	0.825944
M – Professional, scientific and technical activities	0.158911883	0.907563	0.546179
N – Administrative and support activities	3.805106155	0.007937	2.202423
P – Education	0.532266115	0.338624	0.003234
Q – Human health and social care	0.532266115	0.89418	2.712537
R – Arts, entertainment and recreation	0.212864211	0.166667	0.688709
S – Other activities	2.419278111	0.103896	2.631247

Source: own processing

Individual values in Table 3 have been summed (5) and the value of the test criterion has been determined as follows $\chi = 62.2082$. The critical threshold is $\chi_{20.05, 35} = 49.8018$ (Linda, 2006).

Since the value of the test criterion 62.20 is greater than the critical threshold 49.80, the H2 hypothesis has been rejected.

The relationship between the section of CZ-NACE activities and the form of bookkeeping has been proved.

4 Conclusions

The hypothesis H1: Enterprising natural persons do not prefer any form of bookkeeping, was rejected.

The hypothesis H2: There is no relationship between the form of bookkeeping and the CZ-NACE section of activities was rejected.

The survey conducted and subsequent evaluation using statistical tests has shown that enterprising natural persons most often choose the form of tax records, which replaced the original single-entry bookkeeping. This form was chosen by 43% of respondents. The popularity of this form of bookkeeping lies probably in the fact, that enterprising natural persons are able to keep the cash book by themselves, without the need of professional education. On the other hand, 34% of respondents keep the double-entry bookkeeping voluntarily, which already requires professional education and therefore they have to employ an accountant or to use the services of external accountants.

The option of primary evidence of only incomes and the use of the lump-sum expenses to determine the income tax base is used only by 22% of enterprising natural persons. Given that the applicable tax legislation allows to keep tax records while (under certain conditions) to apply the lump-sum expenses when calculating the tax base, it is evident that this tool is not used to reduce administrative burden, as originally intended, but for the tax optimization of enterprising natural persons. Few years ago, it has been proven by the fact that the lump-sum expenses are used by nearly half of all enterprising natural persons (MFCR, 2010), but the survey showed that only 22% of them use them primarily, it means for the purposes of reducing the administrative burden. A quarter of enterprising natural persons keeps books, but due to their tax optimization they choose the lump-sum expenses for determining the tax base.

Furthermore, it has been tested whether the method of bookkeeping differs for the individual fields of activities. It has been found that the form of bookkeeping really depends on the field of activities.

The most common form of double-entry bookkeeping was observed in the following fields:

- B – Mining and quarrying,
- D – Electricity, gas, steam and air conditioning,
- G – Wholesale and retail trade, repair of vehicles,
- H – Transportation and storage,
- I – Accommodation and food service,
- M – Professional, scientific and technical activities,
- Q – Human health and social care.

The most common method of bookkeeping just through the incomes evidence is popular for K Section – Financial and insurance and N – Administrative and support activities, while N - Section had the same number of respondents also in the form of tax records.

The fields where the most common form of bookkeeping are tax records:

- A – Agriculture, forestry and fisheries,
- C – Manufacturing,
- E – Water supply, activities sewerage, waste management,
- F – Construction,
- J – Information and communication,
- L – Real estate activities,
- P – Education,
- R – Arts, entertainment and recreation,
- S – Other activities.

The objective of this paper was to determine which form of bookkeeping is used by enterprising natural persons and whether this form relates to the field of activities in which these persons conduct their business.

Surprisingly, it has been found that enterprising natural persons do not choose the least administratively burdensome method through simple evidence of incomes, but they most often choose the tax records method, and double-entry bookkeeping also has a significant representation. It has been proven by the fact that bookkeeping of natural persons has also an important information function, and that it is not just a base for calculating tax obligations. In addition, a whole quarter of enterprising natural persons that keep books does not use bookkeeping for determining the income tax base from business and chooses the lump-sum expenses, which are more favorable to them.

Regarding the dependence of the form and the associated difficulty of bookkeeping on the section of national economy, this dependency has been statistically confirmed and discussed in chapter 5.

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