Models of the realistic reporting of subsidies in the farm accounting

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Abstract: The paper deals with subsidies in the agriculture and their sources from the perspective of their recipients. The review of literature points out the significance of subsidies for the economics of agriculture and also for the evaluation of the financial position and performance of entrepreneurial entities. The current national and supranational approaches to reporting subsidies within the farm accounting and financial statements are analyzed. The result of the analysis is an identification of distortions in the reported production power and the value of the company property, caused by the yield method which is based on the matching principle. This is also negatively reflected in the income tax base of the entities. Therefore, for a more real view of the situation in financial statements, two models suitable for reporting subsidies were proposed. These are based on the capital approach. The new approaches represent a transparent reporting of subsidies by their recipients in the form of a long-term financial source; they do not allow them to report unearned yields and, on the other hand, they do allow them to report a subsidized property at an unreduced purchase cost. Thus it is possible to compare economic data of the particular companies. This also has a positive effect on the burden of the subsidy recipients laid by income taxes.

Key words: farm, operating subsidies, investment subsidies, economic growth, accounting practices, financial statements, balance sheet, income statement, yield model, capital model, earnings after taxation, earnings before interest and taxes, income tax

Subsidies are in the economic theory understood as a public financial etc. contribution towards achieving a financial balance of a company, authority or organization without specifying the purpose[1]. Subsidies are granted from various sources (the state, the self-governing territorial unit, or a private entity). In the system of public finances, subsidies are found on the expenditure side of the state budget as 'transfers', and they represent a dominant expenditure of the state together with the expenses on the purchase of products and services. The essential character of a transfer payment is that the state, in contrast to the governmental expenses on the purchase of products and services, does not gain any specific immediate performance, although a reciprocal accomplishment of the tasks the subsidies were granted for is expected. By granting a subsidy, the state supports more general aims such as maintaining the cultural landscape or support for publicly beneficial activities. Thus the government decides on the basis of its policy who and to what extent will gain subsidies and the government even establishes special organizations to allocate them[2]. For the recipients, subsidies represent new financial means to gain which they have to meet the established conditions which are usually related to the subject of their activities. From a purely financial perspective, subsidies support economic activities of the user's entity and at the same time they also support the granter's budget in the form of financial back flow. A subsidy can be granted to reduce a price of a property, to cover a provable loss, for loans, interests, tax reliefs, to purchase debts or a part of an entity by

[1]The American Heritage® New Dictionary of Cultural Literacy (2005): Houghton Mifflin Company, Third Edition defines a subsidy as a "grant made by a government to some individual or business in order to maintain an acceptable standard of living or to stimulate economic growth".

[2]In the Ministry of Agriculture of the Czech Republic, the financing of the Common Agricultural Policy from the European funds and national subsidies is controlled by the State Agricultural Intervention Fund headquartered in Prague.

the state, in the form of a governmental guarantee or an adequate profit as defined by law.

The economic reasoning for granting public subsidies the particular companies or fields is based on the concept of market failure according to which the market itself is not able to efficiently solve all situations and makes mistakes (Zemplinerová 2006). The usual examples of market failure are: the monopolistic market forces based on the economies of scale, a lack of new technologies, unemployment rates, and territorial disproportions in life standards. The supporters of the market failure correction recommend governmental interventions and, in the name of welfare (defined as the sum of surplus of consumers and producers), propose various forms of public support, which either reduce the expenses of a company or increase the profit of the selected companies.

In the field of agriculture, the subsidies are besides inefficient resource allocation and unbalanced natural conditions justified especially by the need for the sustainable land use, the maintenance of a viable society in rural areas, the preservation of the landscape and the preservation of and support for the sustainable agricultural systems. In the areas afflicted by specific disadvantages, the continuation of agriculture itself, the maintenance of the minimum number of population and the maintenance of the landscape are in danger (Štolbová et al. 2010). The multifunctional character of agriculture and its significance for landscape maintenance has been dealt with by many studies. Hrabánková and Boháčková (2009) in their publication consider agriculture an irreplaceable factor of the social and economic development of rural areas. The necessity of supporting the sustainable multifunctional agriculture within the framework of Czech natural and ecological conditions has also been expressed in their studies by Majerová (2007), Doucha and Foltýn (2008), Hudečková and Lošťák (2008) and Střeleček et al. (2008). The acceptance of the Common Agricultural Policy pursues the aim of ensuring an adequate life standard for farmers and farm workers and maintaining the European heritage in the field of agriculture.

Specific subsidies granted from the European funds and national sources in compliance with the Commission of the European Communities and the Czech government regulation are oriented at:

– direct payments (DP) paid per 1 hectare of cultivated lands, focusing on the support for multifunctional agriculture including processing of agricultural products;
– Horizontal Rural Development Plan (HRDP), to ensure the sustainable development of rural areas (ended in 2008);
– the development of rural areas with the aims to improve their competitiveness, agriculture and forestry (by the means of restructuring, development and innovations); to enhance the quality of life in rural areas; and to support the diversification of economic activities;
– Common Market Organization (CMO) with the aim to control prices of the particular agricultural products on European markets, to provide producers in the sector with support, to control the production and to organize trade with non-member states; the main tools of market regulation include the intervention purchases, production quotas, self storage, subsidies and guarantees.

Table 1. The structure of public subsidies in Czech agriculture from the European funds

Type of subsidy (in thousands CZK)	2005	2006	2007	2008	2009
Direct payments in total	12 968 990	16 166 508	18 623 330	16 717 989	25 057 063
– from the EU budget	9 889 342	8 808 772	10 702 653	11 125 822	15 021 340
Horizontal Rural Development Plan	6 071 007	6 611 003	3 954 802	3 106 473	2 941 810
– from the EU budget	4 856 186	5 285 112	3 163 097	2 483 097	2 346 738
Rural Development Program	0	0	2 827 536	5 312 240	7 719 595
– from the EU budget	0	0	2 257 028	4 187 811	5 945 177
Common Market Organization	7 865 031	8 571 661	1 189 740	3 739 180	4 294 591
– from the EU budget	2 080 837	1 660 589	823 549	1 727 743	2 019 775
Common Agricultural Policy in total	27 423 952	31 720 647	28 946 015	28 894 984	40 408 438
– from the EU budget	17 290 241	15 754 473	17 149 508	19 532 816	25 344 669
Proportion of the EU funds in %	63.047	49.666	59.246	67.599	62.721

Source: The State Agricultural Intervention Fund

The financial structure of subsidies is dominated by direct payments, followed by the rural development program and the common market organization program. As Table 1 shows, the subsidies manifest a growing tendency with the exception of the HRDP support as this was gradually replaced by the program for rural development for the period 2007–2013. As regards financial sources, the European funds prevail over the national sources (the proportion of payments provided from the European funds during the examined period was over 60% of the implemented public subsidies in average).

The effects of public support on the entities which gained a subsidy are positive and they provide the entities with an advantage over the other entities located in the European territory or even inside the national economy. The possible effect of less favourable natural conditions is limited, the production costs reduced, they are able to use agricultural lands and technologies in a better way, to innovate, to develop their productivity, to retain employees, which includes the strengthening of business security and stability. To measure the effect of subsidies on the earnings of companies usually classical economic indicators based on the financial statements are used. For this, it is assumed that the methodology of the financial statement generation is in compliance with the principle of a fair and true view of economic phenomena in accounting – that the reported accounting data capture the real financial situation of the company and its earnings. However, the current model of the reporting subsidies in farm accounting deviates from the principle of a fair and true view and allows for a distortion of the production power of the farm and the value of its long-term assets. Therefore, some studies have been conducted[3] so that the models which would remove the imperfections in the reporting and viewing of the financial position and the production power of an enterprise could be proposed and described.

METHODOLOGY

The basic classification of subsidies is based on the purpose for which they are used by the enterprising entity. Thus, two classes are distinguished:

– operating subsidies, which serve to cover the entity's expenses; and
– investment subsidies, which serve for the purchase of long-term assets.

In the agricultural practice, the subsidies of the first type predominate; they are represented by a flat payment per an area and subsidies for balancing of the direct payment (Top-Up) from the national sources, for production consumption and for external factors. The development of subsidies and support invested in the Czech agriculture in the period 2005–2009 converted per 1 hectare of land is summarised in Table 2. The presented data confirm the growing tendency during the examined period. The investment subsidies related to agricultural land are considerably lower in comparison with the operating subsidies, by about 5%.

As Table 2 shows, the degree of distortion of the financial statements in companies which gained public support will be proportional to the absolute value of the received subsidy and it will be mainly significant as regards the operating subsidies.

In the accounting balance of the public support recipient, the entitlement to a subsidy usually brings about an increase in assets (A^+), usually in the form of a receivable for the provider (REC) and at the same time in the dependence on the purpose on which it

Table 2. The structure of subsidies and support provided to Czech agriculture in 2005–2009

Type of subsidy (in CZK/ha)	2005	2006	2007	2008	2009
Operating subsidies and support in total	5 751	7 237	7 584	8 287	8 437
– Top-Up and other production	not stated	3 899	4 084	4 325	3 768
– flat payment per area	not stated	2 485	2 774	3 058	3 695
– subsidies for production consumption	not stated	713	583	605	630
– external factors	not stated	140	122	149	147
Investment subsidies	200	197	264	254	452
Ratio of investment/operating subsidies (%)	3.478	2.722	3.481	3.065	5.357

Source: Farm Accountancy Data Network (FADN)

[3]Project of specific research of the Masaryk University No. 56 1707 "European Financial Systems".

focuses, an increment in liabilities and the owner's equity (LOE^+) or a decline in assets (A^-). The dual view of subsidies allows us to identify the subsidy provider (supranational funds, state budgets, regional sources, foundations, etc.) and also the purpose for which it was used.[4] The Czech legislation on accounting allows two forms of subsidy reporting, provided that the company has met the conditions for their gaining and the stipulated obligations:

– subsidy claim for covering the expenses (non-investment, operating subsidy) is reported in the balance according to (1), which can be further developed on the side of liabilities and the owner's equity according to (2), i.e. the owner's equity (OE), or the earnings (E), or the yield (Y) of the company. This form of reporting leads to the outcome that the subsidy is viewed in the income statement as a yield compensating for the expenses.

$$A^+ = LOE \quad (1)$$

$$REC^+ = OE^+ = E^+ = Y^+ \quad (2)$$

– a claim for an investment subsidy is reported on the side of assets of the balance sheet according to (3) and (4) – the assets are increased by the value of the subsidy in the form of a receivable (REC) and, at the same time, the value of the purchased long-term property (LP) is decreased. In extreme cases, when the subsidy covers the entire purchase price of the long-term property, the asset does not enter the balance sheet at all and it will be monitored beyond the balance sheet.

$$A^+ = A^- \quad (3)$$

$$REC^+ = LP^- \quad (4)$$

Additionally, the subsidy has to be reported in the form of the financial means and equivalents (CE), which replaced the receivable:

$$CE^+ = REC^- \quad (5)$$

In contrast to the Czech approaches, the International Accounting Standards (IAS/IFRS)[5] offer two general models of the accounting practices concerning subsidies:

– a yield model, which is analogical to equation (2), i.e. it includes the subsidy in the company yields for one or more accounting periods, or to equation (4), where the subsidy is deducted from the value of a purchased asset;
– a capital model, within which the subsidy is credited directly in favour of the partners' interests. In this model, a subsidy can be reported on the side of assets as the increase in receivables and on the side of liabilities and the owner's equity as the capital deposited by a partner (CP) according to:

$$REC^+ = OE^+ = CP^+ \quad (6)$$

The standards mention the capital model as a theoretical solution only, it is not allowed in the practice and the yield model is preferred. The reason is mainly the fact that the state subsidies and support represent the company income from another source than partners. In argumentation, a matching principle prevails, according to which the subsidies are reported as yields which are assigned with expenses that are to be compensated for. State subsidies are understood as a part of the fiscal policy and they should be reported in a similar way to taxes, i.e. in the Income Statement. Similarly, a subsidy related to depreciable assets can be reported as a yield, during the period and in the ratios in which these assets are depreciated (IFRS 2006). The inclusion of subsidies in the Income Statement in the form of temporally differentiated yields which increase the profit and later enter the undivided profit (Aboody et al. 1999; Belkaoui 1992) is also supported by the US GAAP[6].

The dual view of accounting solutions for the operational and investment subsidies described by equations (1) to (5) is the basis for an analysis which should reveal the drawbacks of both approaches supported by the IFRS and permitted by the Czech GAAP. The identification of problems and their synthesis should result in a proposal of a new, more suitable model of

[4]Changes in the company's balance sheet in the text are expressed by the equations in which plus sign ($^+$) represents an increase in the total balance sheet assets and vice versa ($^-$) represents reducing it.

[5]The IAS is published by a private institution established in 1973, headquartered in London, under the name of The International Accounting Standards Committee. Its members are significant professional organizations of accountants and auditors from different countries of the world. Consulting is provided by the international stock exchanges, financial, trade and legal institutions, banks, etc. Since January 1, 2003, they have been published as the International Financial Reporting Standards (IFRS) to emphasize their control reporting practices, not accounting itself. For the reporting of state subsidies and the publishing of state support, the IAS 20 standard has been published.

[6]The United States Generally Accepted Accounting Principles were created as a response to the historical drop of the American stock exchange in 1929. They are not formulated as any obligatory regulation; their authority is based on the fact that they meet the requirements of stock exchanges and professional organizations.

an accounting solution from the perspective of the external users of financial statements.

RESULTS AND DISCUSSION

The analysis of the yield model of the operating subsidy accounting shows that the way of reporting a subsidy as a yield does not provide a true view of the reality, so it is not in compliance with the basic principle of accounting (Epstein and Mirza 2004; Svoboda 2007). Subsidies granted from external sources are not yields from the company's economic activities and they misrepresent the real production force of the company from revenues measured by the profit before interests and taxes. In the Income Statement, they compensate for the expenses of the company's operations and thus they increase the base for the calculation of income tax. As a result, the achieved earnings in the given accounting period are overvalued by unproduced profits, which is in contrast with the generally accepted principle of accounting cautiousness.

Problems also arise when an investment subsidy is reported according to (4). The deduction of the subsidy from the value of a purchased long-term property leads to the distortion of the total balance sum of the company (Fess and Warren 1987; Dietrich 2000), which is reported in a lower amount than the real one. In addition, an investment subsidy does not reduce the tax expenses on business (Sedláček 2007), as a tax expenses are recognized only the depreciations from a lower input price of the asset in the individual years of depreciation.

The alternative allowed by the international accounting standards[7] to report investment subsidies in the form of yields compensating for a relative part of depreciations for the time of life of the long-term property has the same drawbacks as the reporting of an operating subsidy as a yield.

The total value of distortions in financial statements in 2009 due to the yield model of reporting is illustrated in Table 3. When the yields reported in agriculture were purified and the value of unearned yields, i.e. the granted operating subsidies, was deducted, the drop was 39.38%, while in industry and trade it was 0.49% only. After the fixed assets in full purchase prices (originally decreased by the value of provided investment subsidies) are included, the value of assets in the modified balance rises by 0.57% in agriculture and by 0.14% in industry and trade. The table confirms that if the field is strongly subsidised, this way of reporting subsidies leads to considerable differences compared to the really achieved profits (losses) or the value of property, which makes any comparison of the financial situation of the entities and their performance in the field and outside more complicated.

The undervaluation of the balance sum reported by the companies who received an investment subsidy can be prevented by the method of the 'remaining subsidy'[8], in which the purchased asset enters the balance with the purchasing price (PP) and the reception of the subsidy is reported as the increase in the financial means (CE), and at the same time as a liability which the company would have to pay back if it failed to meet the stipulated conditions. The purchase price is divided into the unsubsidised part (UP – depreciated on account of expenses EX) and the subsidised part (SP) which remains constant over the entire period when the asset is used (LS – liability from subsidy). When its life ends, the asset is removed

Table 3. The effect of the yield model of reporting subsidies on yields and assets reported in 2009

Field (mill. CZK)	Subsidies	Yields	Purified yields	Sum of assets	Modified balance	Difference %)
Agriculture	40 408	97 381		361 693		
– operating subsidies	38 354		56 973			–39.38
– investment subsidies	2 054				363 747	+0.57
Industry and trade	18 173	2 842 852			2 937 979	
– operating subsidies	14 127		2 828 725			–0.49
– investment subsidies	4 046				2 942 025	+0.14

Source: Czech Statistical Office, author's own calculation

[7]Czech GAAP does not allow this option.

[8]This method is described in more detail in Kouřilová et al. (2009), which is the output of the research MSM 6007665806 of the University of South Bohemia, Faculty of Agriculture, České Budějovice.

from the balance against cumulated depreciations and a cancelled subsidy.

$$A^+ = PP^+ = LOE^+ = L^+ \quad (7)$$

$$PP^+ = UP^+ + SP^+ = \sum EX + LS \quad (8)$$

$$PP^- = \sum EX^- + LS^- \quad (9)$$

A more suitable form of an investment subsidy reporting, the proposal of which was the result of the aforementioned project MSM 6007665806 and the specific research of the Faculty of Economics and Administration, Masaryk University[9], is based on the proportional depreciations according to the IFSR; however, this form does not transfer the subsidized part of the asset gradually to the company's yields but on the account of a capital fund created from subsidies (subsidy accounting – SA). Depreciation from the purchase price of the asset is then conducted in a standard way by the means of adjustments (ADJ), which are divided into the depreciation of the unsubsidised part and the subsidy accounting according to equation (10). Thus the value of the provided subsidy gradually drops in proportion to the performed depreciations and the property is reported in the balance sheet in its current book value (gross, correction, net value).

$$PP^+ = ADJ^+ = \sum EX + \sum SA \quad (10)$$

$$PP^- = SA^- \quad (11)$$

For operational subsidies, there is a solution which eliminates the effect of the subsidised yields on the earnings of the company and thus the increased tax burden on the company. The provided subsidy is credited to the capital fund created from subsidies (FS). This practice can be illustrated by the means of a modified equation (2):

$$REC^+ = OE^+ = FS^+ \quad (12)$$

The received subsidy is located in a special capital fund created from subsidies in full amount during the entire time of their use. By placing it in the owned capital, it strengthens the company's own resources, which are not yields from activities and do not increase the company's profit. In this way, the subsidy cannot be immediately paid out to the company owners (investors) as dividends or shares. The subsidy can be changed into another element of the owned capital only after it is used at a time or gradually in dependence on its real use.

Theoretically, a subsidy could be located inside the foreign capital as an external source (liability) which does not have to be paid back provided that the conditions for subsidy granting are met and when the time of its use finishes, it could be transferred to the account of the owned capital.

Both models represent a transparent reporting of a subsidy in the company's balance sheet; in the analysis of its financial situation or performance they allow us to measure the profitability of the owned or foreign capital with respect or without respect of the effect of the subsidy (Samuelson and Nordhaus 1992; Damodaran 2001).

CONCLUSION

As follows from the definition, the purpose of public support is to encourage the publicly beneficial activities, which in agriculture mainly means the maintenance of a viable community in rural areas, the maintenance of landscape, the continuous use of agricultural lands, sustainable agricultural systems and the support for their economic growth. For an entrepreneurial entity, a subsidy means a new financial resource, which will affect its situation concerning properties which should produce a higher economic benefit for the company. A subsidy is expected to increase the value of the invested capital in the production activities of the company and to produce a positive profit and loss ratio, or an economic added value. The measurement of the economic effects of a subsidy on a company is influenced by the way it is recognized and used in the accounting practices in the company and reported in its financial statements.

The analysis of approaches to reporting subsidies in accounting confirmed that supranational regulations and Czech accounting legislation both prefer the yield approach, both for the subsidies provided to cover the expenses (operational subsidies) and the subsidies provided to purchase long-term assets (investment subsidies). As regards operational subsidies, this method reports yields which are not results of the production activity of the company, profit that has not been earned but it has been provided by an external source; moreover, the income from the subsidy increases the base for the income tax calculation. As regards the investment subsidies, the value of the total assets of the company is decreased by the subsidy, depreciations are carried out from the unsubsidised value of the long-term assets only and the purchase price of the long-term assets or the value of the accepted subsidy cannot be viewed in financial statements. In

[9]Project No. 56 1707 "European Financial Systems" solved at Masaryk University, Faculty of Economics and Administration in Brno in 2009.

fact, this approach violates the principle of a fair and true view of reality in accounting.

To solve the above mentioned problems, two models of reporting subsidies are proposed, they are based on equations (10) and (12). The models fall within the capital approach. The advantage is the transparent reporting of subsidies in financial statements of a farm and the prevention of the subsidies being drawn on immediately in the form of the division of the company profit into shares or dividends for the owners. Analytical methods used for the measurement of the company financial position and performance thus get more realistic as they are unaffected by an incorrectly reported value of the company's assets (undervalued in consequence of the accepted subsidies) or distorted earnings (higher in consequence of the unproduced yields). Moreover, the capital model of reporting operational subsidies will be positively reflected in the field of income taxes of the entrepreneurial entities because the tax base is then only based on the yields really produced, without the subsidized ones.

By capitalizing the accepted subsidies, a company will achieve a fairer and truer view of the reality in its accounting and a higher security in the form of its own long-term source of finances, and generally, we achieve a better comparability of the financial situation and performance of companies in the sector and outside. The practical significance of the capital approach is higher in agriculture, as documented in Table 3, as this is a strongly subsidized field.

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