BRAZILIAN FARM FINANCIAL STATEMENTS: A NEED FOR STANDARDIZATION[1]

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ABSTRACT - There is an apparent increasing demand of Brazilian farmers for farm financial analyses. However, existing models do not seem to be properly defined for those purposes. This paper discusses alternative structures proposed by Santos (1991) for two of the most important farm financial statements: Balance Sheet and Income Statement. The traditional structures of non-agricultural firms are used as references. The results show that despite the differences, the statements presented by that author can be easily compared to the ones used by non-agricultural firms. In this sense, the study can be considered a step towards standardization of Brazilian farm financial statements.

Index terms: agricultural finance, agricultural financial reports.

DEMONSTRATIVOS FINANCEIROS RURAIS NO BRAZIL: A NECESSIDADE DE PADRONIZAÇÃO

RESUMO - Existe uma aparente demanda dos agricultores brasileiros por análises financeiras da empresa rural. Entretanto, os modelos existentes não parecem estar adequadamente definidos para aquele objetivo. Este trabalho discute formatos alternativos propostos por Santos (1991) para dois dos demonstrativos financeiros mais importantes: Balanço Patrimonial e Demonstrativo do Resultado (Produção) do Exercício. Os formatos tradicionais das empresas não-rurais são utilizados como referências. Os resultados mostraram que, apesar das diferenças, os demonstrativos apresentados por aquela autora podem ser facilmente comparados com os das empresas não-rurais. Nesse sentido, o trabalho pode ser considerado um passo na direção de uma padronização dos demonstrativos financeiros agrícolas.

Termos para indexação: finança rural, relatórios financeiros agrícolas.

INTRODUCTION

One could say that farm financial analyses gain popularity among farmers only after they face serious economic adversities. The increased number of researches, extension publications, software and many special programs dealing with farm financial analyses in the U.S. and other countries (such as New Zeland) is an evidence of such phenomenon. Brazil is not exception.

During several decades, the Brazilian agricultural sector, although claimed by agricultural economists to have transferred resources to finance the

country's industrialization, was, in fact, partially compensated for other government policies. Among these, the most important were subsidized rural credit and the adoption of more realistic exchange rates which had a strong impact upon agriculture. The production of new agricultural products for national industry and exports, through the use of more capital intensive technology, increased greatly.

The 80's, however, were not favorable to farmers as credit subsidies substantially declined, energy prices were high and inflation rates reached levels never attained before. More recently, a new income taxa law, about to be regulated, was announced by government. All these factors contributed to increase complexity of the farm business, mainly in the Southern part of the country, with its consequent managerial difficulties. As a result, farmers' demand for better management technology increased in the past years, mainly in the area of agricultural finance.

However, a gap can be identified between farmers' needs and research response. A recent study on agricultural accounting (Santos, 1991) pointed out several shortcomings of the existing models found in the Brazilian literature. In some cases, it was clear that accounting elements were not well specified. Most important of all, however, seemed to be the general lack of precision of the models in defining the information to be generated out of the system. The author, in an attempt to better respond to farmers' increasing demand, proposed a new agricultural accounting model. It was tested on a 200 ha farm in the State of Minas Gerais, for the month of December, 1991. The objective of this paper is to discuss the information generated by that model, to the extent that it may represent a step towards standardization of Brazilian farm financial statements. It should be pointed out, however, that the author had in mind a standardized model that should be as close as possible to the model used by firms outside the agricultural sector, from now on referred to as **traditional** or **conventional** model.

INFORMATION GENERATED BY THE MODEL

The information generated by the model developed by Santos were the following financial reports: a balance sheet, income (or production) and cash flow statements, besides reports on inventory control (permanent and periodic). Only the first two will be discussed below.

The balance sheet

It was decided that the well known structure of Balance Sheet used by

non-agricultural firms (Iudícibus, 1980; Copeland, Dascher & Davison, 1980; Marion, 1991) should be maintained (Table 1). Therefore, there are only two groups of assets and liabilities: current (assets convertible/consumed/payable within next agricultural year) and non-current (after next agricultural year). This will enhance comparative analyses between agriculture and other sectors of the economy and it will contribute to increase labor efficiency of institutions such as Banks, already familiar with the traditional structure.

TABLE 1. Balance sheet for Fazenda Bocaina, December 1, 1990.

Item	Value (in Cr$)	Value (in US$)
Assets	27,121,721.00	184,928.62
Current	5,348,303.00	36,342.81
· Liquid	10,000.00	67.96
· Short-term receivables	0.00	0.00
· Inventories	5,338,303.00	36,274.85
· Prepaid expenses	0.00	0.00
Long-term receivables	0.00	0.00
Permanent	21,864,418.00	148,585.81
· Investment	0.00	0.00
· Fixed	21,864,418.00	148,585.81
· Deferred	0.00	0.00
Liabilities and owner equity	27,212,721.00	184,928.62
Current	0.00	0.00
Long-term payables	0.00	0.00
Net future income	0.00	0.00
Owner's equity	27,212,721.00	184,928.62
· Capital	7,357,500.00	50,000.00
· Reserves	0.00	0.00
· Accumulated profits	1,855,221.00	134,928.62

Current assets were classified into Liquid, Receivables, Inventories and Prepaid Expenses. Some differences from the traditional model still prevail, however. For instance, raised breeding animals are included in livestock inventories with marketing animals. The author also recommends that

R. Econ. Sociol. Rural, Brasília, v. 31, n° 1, p. 65-72. Jan/mar. 1993

67

inventories of agricultural products and inputs, be valued by their prevailing market prices. Growing and producing permanent crops, on the other hand, are valued by their accumulated production costs. The reason for such differences with the traditional Balance Sheet will become clear in the discussion of the Income Statement. Long-term receivables are assets which will be converted into cash after the following agricultural year.

Permanent assets include Investments, Fixed, Fixed in Progress, and Deferred Charges whose valuation should follow the conventional model. The first asset group is composed by investments of a long-term nature, made outside the agricultural sector, by the farm. Fixed and deffered charges are value by the difference between their acquisition (production) cost minus accumulated depreciation (or amortization), when applied. Fixed Assets in Progress are valued by their accumulated costs. The value of the investment (in an orchard, for instance) is transferred to Fixed Assets only after commercial production takes place and depreciated from that date on. This is the criterion which should be used with raised breeding animals (Marion, 1985; Farm Financial Task Force, 1991; Mattos, 1991). However, given its difficulty to be adopted by farmers, this author suggests that the heifer, when ready to enter the breeding program, be "sold" (farm use), to the fixed asset group by the prevailing market price. Any capital gain/loss that might occur by their sale time will be considered off-farm income (expense) as in the traditional model.

Classification and valuation of liabilities did not differ from the traditional model. Liabilities were classified in current, non-current and net future income. The suggested component of net worth were: Capital, Reserves and Accumulated Profits (Losses). The first refers to the initial capital invested in the acquisition of the farm as well as all additional capital invested by the owner(s) thereafter. Significant changes in the real value of permanent assets should be reflected in the net worth component reserves. Accumulated profits are profits from prior accounting periods, which were not invested in the farm.

The following conventional financial ratios from Balance Sheet are recommended by this author: current ratio (current assets/current liabilities), debt/asset ratio (total liabilities/total assets) and financial leverage (total liabilities/total assets) and financial leverage (total liabilities/total equity). A **modified current ratio** (current assets – annual growing crop – producing perennial crops)/current liabilities is also suggested. It can be argued that this modified ratio is more realistic in the sense that it excludes the most risky current assets from its calculation.

The income (production) statement

The difference between the proposed and the conventional income

statements is not so great as it initially appears. As indicated in Table 2, Net Income from Farm Production is measured by the difference between the value of farm production in the period and expenses. The latter are **production costs** necessary to generate that production and **operating expenses** necessary to maintain farm production capacity. In the conventional model **Net Income from Farm Operations** is the difference between farm **sales** in the period and the corresponding expenses (**cost of goods/services sold** and operating expenses).

TABLE 2. Comparison between the structure of traditional and proposed income (production) statements.

Traditional[1]	Proposed
Value of sales	Value of farm production
(−) Cost of goods sold	(−) Cost of goods/services produced
Gross margin on sales	Gross margin on production
(−) Operating expenses	(−) Operating expenses
Net income from farm operations	Net income from farm production
(+) Other revenue	(+) Off-farm income
(−) Other expenses	(−) Off-farm expenses
Net income before taxes	Net income before taxes
(−) Income tax expenses	(−)Income tax expense
Net income	Net income

[1] Source: Copeland, R.M., P.E. Dascher and D.L. Davison. **Financial Accouting.** New York: John Wiley & Sons Inc., 1980* Marion, J.C.. **Contabilidade Empresarial.** São Paulo: Editora Atlas S.A., 1986* Santos, M.R.S.M., Contabilidade rural: um enfoque gerencial. São Paulo: Universidade de São Paulo, 1991.

The proposed Income (or Production) Statement defines Value of Farm Production (VFP) as:

$$VFP = VS + HC + PK + IU + FU + CI - PP - RK \qquad (1)$$

where:

VS = value of agricultural products sales;

HC = value of agricultural products consumed at home;

PK = value of payments in kind;

IU = value of internal use of agricultural products (as intermediary

R. Econ. Sociol. Rural, Brasília, v. 31, n° 1, p. 65-72. Jan/mar. 1993

69

products);

FU = value of farm use of raised breeding animals;

CI = value of change in agricultural products inventories;

PP = value of agricultural products purchases;

RK = value of revenues received in kind.

The variable **farm use,** added to Santos' model, refers to the transfer of raised breeding animals to fixed assets. By using that definition of value of farm production it was possible to consider each enterprise as a "profit center" (Table 3). Brazilian farmers consider this a highly valuable information. Thus, corn profitability (measured by gross margin on production) is calculated by the difference between value of corn production in the agricultural year and the necessary cost to generate that production. The latter is calculated by:

$$CGSP = VC + FC + BI - EI + BG - EG \tag{2}$$

where:

CGSP = cost of goods/services produced in the agricultural year;

VC = acquisitions of variable resources in the agricultural year;

FC = expenses with fixed resources in the agricultural year:

BI = value of beginning inventory of supplies used in the enterprise;

EI = value of ending inventory of supplies used in the enterprise;

EB = value of beginning inventory of the growing annual (or producing perennial) crop (when applied);

EG = value of ending inventory of the growing annual (or producing perennial) crop (when applied);

Net Income from Farm Production is obtained by subtracting cost of goods/services produced plus operating expenses from value of farm production in the period. Operating expenses are general farm expenses (administrative, sale and financial). **Net Income** is the overall profitability measure (net farm income from production + off-farm income – off-farm expenses – income tax). For easy of presentation, the following components of the Santos' model were excluded: real gain/loss in monetary items (due to inflation), and participations and contributions.

The most important overall profitability ratios to be calculated from the Income (Production) Statement suggested by the author are: rate of return on

R. Econ. Sociol. Rural, Brasília, v. 31, n° 1, p. 65-72. Jan/mar. 1993

70

assets and rate on return on equity. The first is calculated by dividing return on assets (net income + interest paid –return on family labor and management) by average total assets. The second is the result of the division of return on equity (net income –return on family labor and management) by average equity. These ratios, however, are not directly comparable to neither those used by Brazilian non-agricultural firms nor to those used by agricultural firms outside the country (Farm Financial Task Force, 1991; James & Stoneberg, 1980; Lee, Boehlje, Nelson & Murray, 1980). This difference is due to the way net income is measured by each model. This author recommends, however, that for the purposes of international comparisons, two other ratios should be added to the statement report: rate of return on **farm** assets and rate of return on **farm** equity, which replace **net income** by **net income from farm production** in the above calculation.

TABLE 3. Proposed income (production) statement for Fazenda Bocaina, December 1, 1990.

Item	Real value (US$)					
	Farm	Center of indirect results	Corn	Pasture	Dairy	Other
Value of farm production in the period	5.615,50	100,00	511,40	907,40	4.036,10	60,60
Variable production cost	378,00	75,50	34,90	20,00	207,00	40,60
Margin on Variable production cost	893,20	24,50	1,50	887,40	(40,20)	20,00
Fixed production cost	2.487,90	467,30	192,60	736,20	1.091,80	0,00
Variable + fixed cost	2.865,90	542,80	227,50	756,20	1.298,80	40,60
Variable & Fixed cost adjustments	(227,50)	0,00	(227,50)	0,00	0,00	0,00
Cost of goods/Services produced	2.638,40	542,80	0,00	756,20	1.298,80	40,60
Gross margin on production	(1.367,20)	(442,80)	36,40	151,20	(1.132,00)	20,00
Operating expenses	47,50	0,00	0,00	0,00	0,00	0,00
Net income from farm production	1.414,70	0,00	0,00	0,00	0,00	0,00
Off-farm income	171,10	0,00	0,00	0,00	0,00	0,00
Off-farm expenses	49,00	0,00	0,00	0,00	0,00	0,00
Net income before tax	(1.292,60)	0,00	0,00	0,00	0,00	0,00
Income tax expenses	0,00	0,00	0,00	0,00	0,00	0,00
Net income	(1.292,60)	0,00	0,00	0,00	0,00	0,00

Source: Santos, M.R.S.M. Contabilidade rural: um enfoque gerencial. São Paulo: Universidade de São Paulo, 1991.

R. Econ. Sociol. Rural, Brasília, v. 31, n° 1, p. 65-72. Jan/mar. 1993

71

CONCLUSIONS

The model presented by Santos can be considered an important step towards standardization of Brazilian farm financial statements. Despite the innovations introduced by the author in the Income Statement (mainly by creating "profit centers"), it can be easily compared to the traditional Income Statement. This is an important point to be taken into consideration, given the popularity of the traditional model and the increasing interaction of farms with the agribusiness sector of the economy. Mostly important, the author showed the need for farm managers to clearly define the information they want to generate out of an accounting system. In this respect, it can be considered an important contribution to the development of Brazilian farm management tools.

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R. Econ. Sociol. Rural, Brasília, v. 31, n° 1, p. 65-72. Jan/mar. 1993

72