THE INFLUENCE OF 5-C FACTORS ON RATE OF CREDIT RETURN IN BEEF CATTLE FARMING IN CENTRAL JAVA

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ABSTRAK

Tujuan penelitian adalah menganalisis (i) pendapatan usaha ternak sapi potong, (ii) kemampuan peternak untuk memenuhi kewajiban pengembalian kredit; (iii) peranan faktor *Character, Capacity, Capital, Collateral dan Conditions (5C)* dan pengaruhnya terhadap pengembalian kredit. Penelitian menggunakan metode survai pada peternak sapi potong pola penggemukan dan induk-anak yang memanfaatkan kredit sebagai modal usaha. Penentuan sampel menggunakan *two stage clustered random sampling* pada lima kabupaten berdasarkan populasi sapi potong di Jawa Tengah yaitu Blora, Rembang, Grobogan, Wonogiri dan Boyolali. Jumlah sampel 100 responden, terdiri 50 responden pola penggemukan dan 50 responden pola induk-anak. Data dianalisis dengan metoda deskriptif dan statistik inferensial, yang meliputi analisis skor, pendapatan dan regresi linear berganda. Hasil penelitian menunjukkan bahwa pendapatan usaha ternak per-tahun pola penggemukan lebih besar dibandingkan pola induk-anak (Rp 8.954.208,00>1.606.786,00), dan kontribusi pola penggemukan terhadap pendapatan rumahtangga lebih besar dibandingkan pola induk-anak (49,45>14,91%.). Kemampuan peternak mengembalikan kredit 61,35% dari jumlah kredit sebesar Rp 22.482.510,00. Hasil evaluasi menunjukkan bahwa *character* dan *capacity* peternak berada pada katagori cukup baik, sedangkan nilai *capital* Rp 14.932.500,00, *collateral* Rp 58.740.000,00 dan *conditions* Rp 14.440.600,00. Hasil analisis regresi menunjukkan bahwa *capital* dan *collateral* berpengaruh nyata terhadap pengembalian kredit, sedangkan *character, capacity,* dan *conditions* tidak berpengaruh nyata.

Kata kunci : Pendapatan, faktor 5-C, kredit, pola penggemukan, pola induk anak.

ABSTRACT

The aims of study were to analyze (i) income of beef cattle farming, (ii) ability of farmers to meet their obligation for returning credit, (iii) role of character, capacity, capital, collateral and conditions (5C) and its effect on credit return. The study was conducted using survey methods on farmers (fattening and cow-calf operation), who use credit. Sample location was determined using two stage cluster random sampling based on beef cattle population, namely region of Grobogan, Blora, Rembang, Wonogiri and Boyolali. Number of respondents was 50 for fattening and 50 for cow-calf operation. Data were analyzed by descriptive and inferential statistic, which consisted of scoring, income and multiple linear regression. Results showed that income per-year of beef cattle fattening was greater than cow-calf operation (IDR 8,954,208.00>1,606,786.00), as well as its contribution to the household farmers' income (49.45>14.91%). Credit return ability was 61.35% based on amount of credit IDR 22,482,510. Five-C analysis resulted that character and capacity of farmers were in adequate category, while capital, collateral and condition were IDR 14,932,500.00, IDR 58,740,000.00 and IDR 14,440,600.00. Capital and collateral had significant effects, while character, capacity and condition had no significant effects on credit return.

Keywords : income, 5-C factors, credit, beef cattle fattening, cow-calf operation

INTRODUCTION

Gross Regional Domestic Product of livestock's contribution on the agricultural sector in Central Java is the second-largest after food crops (Badan Pusat Statistik Provinsi Jawa Tengah, 2009). On the other hand, livestock production has been unable to meet the need of food originated from animal (except eggs). In Central Java, an indicator of livestock development is reflected by the number of livestock production. The average of productions of meat, eggs and milk from 2006 to 2008 positively increased, by 194,601,425 kg, 199,773,138 kg and 71,102,512 liter, respectively, while the animal protein consumption was 4.73 g/cap/day; 4.18 g/cap/day, and 4.31 g/cap/day, respectively (Dinas Peternakan Jawa Tengah, 2009). If the condition was compared with the consumption of animal protein standardized by LIPI (Indonesian Institute of Sciences) which is 6.00 g/cap/day, so the livestock subsector still has a positive opportunity to be developed.

One of the important commodities of livestock subsector is beef cattle. Beef cattle are the one of meat-producing resources that has high economic value, and has important role in public life. Beef cattle have important social function in community, therefore it is important to be developed (Sumadi *et al*., 2004). Beef cattle farming are largely cultivated in Central Java (Sumadi, 2010) which spreads from the lowlands to the highlands; with an average of farm scale is 2.80 head. According to Prasetyo *et al*. (2011), one of the weaknesses of the livestock system is the beef cattle farmers have not commercially oriented, therefore agribusiness system has not been implemented properly (Ekowati *et al*., 2011). The implementation marketing agribusiness subsystem at the beef cattle farmers' level is in somewhat good condition, which has the lowest score compared to the other subsystems (Prasetyo *et al*., 2011). These conditions will negatively impact to the income and economic efficiency in the production process. One of the government's efforts to develop beef cattle farming is providing easy policies to facilitate beef cattle development. One of these policies is capital that still concern to low interest of credit, such as KUPS (*Kredit Usaha Perbibitan Sapi Potong*/Credit of Beef Cattle Breeding) and KKPE (*Kredit Ketahanan Pangan dan Energi*/Credit of Food Security and Energy).

Farming credit is a policy instrument to break the vicious circle of farming problems, which are the low of income levels, the weak capital ability, the weak ability to buy facilities and the low farming productivity, which cause the low of profit (Oakley, 1988 and Mandaka, 2005). The government has set a credit scheme that comes from banking (Permenkeu No. 131/PMK.05/2009), in order to encourage beef cattle farming.

The aims of this study were to analyse (i) the income of beef cattle farming on debtor farmers, (ii) the ability of farmers as debtors in order to meet their obligation for returning credit, (iii) the role of factors character, capacity, capital, collateral, conditions (5C) and its effect on of credit return.

MATERIALS AND METHODS

The study was focused on beef cattle farming, and the elementary units were farmers as a credit debtor in Central Java (especially in Grobogan, Blora, Rembang, Wonogiri, and Boyolali region) which was conducted from April to November 2010. It was needed to collect empirical data from primary sources and secondary source, so the result of study can represent real condition. Then, data processing, data analyzing, and discussion could be conducted.

The study was conducted using survey methods, and the farmers as respondents. Primary data was a cross-section data collected using questioners. Sample as object of study was determined using Two Stage Cluster Random Sampling method (Singarimbun and Effendi, 1995). The primary units were five regions (Grobogan, Blora, Rembang, Wonogiri, and Boyolali regions); while the secondary units were farmers who use farm credit facilities. The population of farmers was selected by random sampling. The number of respondents in each region was 20 respondents (10 fattening and 10 cow-calf farmers), so the number of samples in 5 regions was 100 respondents.

The ability of farmers as a debtor in a credit return was calculated using the formula:

ACR = (MCR + ICR)

where

ACR : The ability of credit returns (in IDR).
MCR : Main Capital Return (in IDR).
ICR : Interest of Capital Return (in IDR).

The conditions of 5-C factors (Character, Capacity, Capital, Collateral, Conditions) at the

farmer level were analyzed using descriptive qualitative as follows: (i) Character is the commitment of farmers in order to repay the loan. According to Riyanto (1995), character indicates the possibility of customers to be honest attempt to meet their obligations. Edillius (1994) stated that character is a moral aspect that needs to be assessed, especially with the motivation to repay the loans. In this study, the character was analyzed using score; (ii) Capacity is the productivity of beef cattle produced by farmers that receive business loan for a year. Unit of measurement is body weight gain of beef cattle or number of calf, (iii) Capital is a farmer's capital for running beef cattle farming for a year. The Unit of measurement is IDR; (iv) Collateral is guarantee that is converted in the value of money handed over to the executor bank as a consequence of receiving bank credits (as debtor). Unit of measurement is IDR, (v) Condition is another factor that has relevance to the repayment of credit, which is farmers' revenue not included to beef cattle farming. Unit of measurement is IDR. The influencing of 5-C factors to the rate of credit return ability on farmers was analyzed using Multiple Linear Regression (Ghozali, 2007).

RESULTS AND DISCUSSION

Characteristics of Beef Cattle Farming

Beef cattle farming is a class of agricultural on an animal husbandry enterprise which is practiced many farmers (Ekowati *et al*., 2011). Ninety two percent farmer families have opinion that livestock is the only first level sustainable source of livelihood (Herani, 2008). Therefore, beef cattle farming is kept living among those farm households in the village as one of their livelihoods. The average number of beef cattle cultivated by a farmer was 2.68 head (2.96 head beef cattle fattening and 2.40 head cow-calf operation). Forty nine percent of beef cattle farm was sideline farm which is consist of 52.00% beef cattle fattening and 46.00% cow-calf operation, while semi-commercial farm was 31.00% and commercial farm was 20.00%. These conditions caused the farmers have not obtain income optimally. The technology of beef cattle farming implemented by farmers was traditional, amount to 38.00% (32.00% beef cattle fattening and 44.00% cow-calf operation). Forty-eight percent of farmers already used the intensive technology in beef cattle fattening, whereas 48.00% farmers used semi-intensive technology in cow-calf operation. Based on the status of beef cattle farm showed that 91.00% beef cattle were owned by farmer (94.00% beef cattle fattening and 88.00% cow-calf operation). The main reason of beef cattle farm was saving, so farm owner was more dominant than the others. The dominant of beef cattle which cultivated by farmer was Ongole Crossbred (OC) (56.00%), and then followed by Simmental Crossbred (SC) (33.00%), Limousine Crossbred (LC) (7.00%) and Brahman Crosbred (BC) (4.00%). Meanwhile, the dominant fattening of beef cattle farm was SC (57%) and cow-calf was OC (82%). The OC was a race of beef cattle that much preferred by farmers, because OC is easier to be raised than other races, although it was difficult to produce high body weight gain if cultivated as beef cattle fattening. That was in line to Aryogi *et al*. (2006) and Hartati *et al*. (2006) that OC was the race which have a high adaptability to the environment and easy to be maintained. Feed is one of the environmental factors that influence the productivity of livestock (Lestari *et al*., 2011). The dominant type of cage was semi-permanent (49.00%), and then followed a simple type (27.00%) and permanent type 24.00%. The dominant type of cage was a permanent type (44.00%) in beef cattle fattening and semi-permanent type (68.00%) in cow-calf operation. This condition was reasonable as cow calf operation was handed down from generation to the other even though it was not the main purpose of beef cattle farming. Based on the sale of livestock products, mostly targets were middle-man (36.00%), animal market (25.00%), slaughter-man (23.00%), and commission-man (16.00%).

Based on livestock productivity can be known that : (i) in beef cattle fattening, the average of body weight gain was 0.68 kg/day with 8.18 months of fattening, (ii) In the cow-calf operation, the number of calf produced was 0.88 head of cattle/breed/ year.

Identification Credit of the Beef Cattle Farming

Beef cattle credit was facilitated by a variety programs, the dominant credit programs were KKPE (69.00%) and KUPS (10.00%), while the other loan programs had small percentage (<10.00%). Financial institutions as implementers of credit were BRI (*Bank Rakyat Indonesia*) (65.00%), *Bank Jateng* (11.00%) and other banks (<10.00%). The credit guarantees were land certificate (87.00%), no collateral (12.00%), and

others (1.00%). In beef cattle fattening, the average of guarantee value was IDR 72,280,000 and the average of credit value was IDR 22,712,000. In cow-calf operation, the average of guarantee value was IDR 45,200,000 and the average of credit value was IDR 17,048,000. Interest credit rate was below than interest of common rate, which the average was 6.87% per year. This condition was expected to have a positive impact on the existence of beef cattle farming

The Income of Beef Cattle Farming

Based on the results of data analysis, the value of production costs, revenues and income of the beef cattle farming were presented in Table 1. The income of beef cattle fattening with 2.96 head and 8.18 months time operation was IDR 6,103,786.00, and the income of cow-calf operation with 2.40 head was IDR 1,606,782.00/year. That condition showed that the beef cattle fattening was more favorable than the cow-calf operation of beef cattle farming. Based on Provincial Minimum Wage (PMW) in Central Java, the value of beef cattle fattening farming's income was better than the cow-calf operation's, because the income of beef cattle fattening was greater than PMW in Central Java (IDR 746,184.00>675,000.00) and income of cow-calf operation was smaller than PMW in Central Java (IDR 133,899.00<675,000.00). The result of beef cattle income reflected that the cow-calf operation with 2.40 head did not have better advantages compared to PMW and has not been worth to be cultivated.

The contribution of beef cattle fattening's income was 49.45%, while contribution of cow-calf operation's income was 14.91%, compared to total income of farm household. According to Rahmanto (2004), the contribution of beef cattle fattening farm income was only 10-15 percent. This condition indicated that the beef cattle farming had an important role to generate total income of farm household.

The Ability of Credit Return

The average rate of credit return to total of credit on beef cattle farming was presented in Table 2. Both of beef cattle farm had the ability 61.35% to installment payment from the average number of credit amount to IDR 22,482,510.00 which was consist of capital amount to IDR 20,075,000.00 and interest of credit amount to IDR 2,407,510.00. Meanwhile, the result of beef cattle farm partially analysis was: (i) in beef cattle fattening, the average farmer had the ability to installment payment of credit amount to 67.22% from the average number of credit that amount to IDR 25,797,920.00 which consisted of IDR 23,112,000.00 capital and IDR 2,685,920.00 interest. (ii) in cow-calf operation, the average farmer had the ability to installment payment of credit amount to 55.49% from the average number of credit that amount to IDR 19,167,100.00 which

Table 1. Farm Scale of Beef Cattle, Cost of Production, Revenue and Income of Beef Cattle Farming

Components	Farm Pattern		Average
	Fattening	Cow-calf	
Farm scale (head)	2.96	2.40	2.68
Time operation (month)	8.18	12.00	10.09
Cost of production			
Fixed cost (IDR)	831,500	390,728	611,114
Variable cost (IDR)	26,935,274	6.161,550	16,548,412
Revenue :			
Beef cattle (IDR)	33,356,510	6,465,600	19,911,055
Manure (IDR)	514,050	1,768,460	1,141,255
Income (IDR)	6,103,786	1,606,786	3,855,286
Income/month (IDR)	746,184	133,899	440,042
Household farmers income (IDR/year)	18,106,000	10,775,200	14,440,600

Table 2. The Average of Beef Cattle Credit Installment Payment on Fattening and Cow-calf Operation

Components	Fattening	Cow-calf	Average
Amount of credit (IDR) :	25,797,920	19,167,100	22,482,510
Capital (IDR)	23,112,000	17,038,000	20,075,000
Interest (IDR)	2,685,920	2,129,100	2,407,510
Installment payment (IDR) :	17,341,920	10,636,300	13,989,110
Capital (IDR)	15,532,000	9,554,000	12,543,000
Interest (IDR)	1,809,920	1,042,300	1,426,110
The ratio of Installment payment to the amount of credit (%)	67.22	55.49	61.35
Period of credit (month)	20.28	24.24	22.26

consisted of IDR 17,038,000.00 capital and IDR 2,129,100.00 interest.

Identification of the Role of 5-C Factors

Identification of the implementation of 5-C factors (character, capacity, capital, and collateral, conditions) to credit return on farmer was presented in Table 3. Character is farmers' commitment to installment payment of credit, which was reflected to the moral aspect. Character indicates the level of farmers' honesty in order to meet their obligations. Based on the result of research, character of farmers in beef cattle fattening, cow-calf operation, and both was in the adequate category; with the score was 3.37, 2.93, and 3.15 respectively. The beef cattle fattening farmers had better character than cow-calf operation farmers (3.37>2.93). Capacity is the sum of the livestock product per year. Capacity of beef cattle fattening farmer was identified by the body weight of cattle and the capacity of cow-calf operation farmer was identified by the number of calf. Based on the result of data analysis, the capacity of farmers was in the adequate category, the score was 2.68 on beef cattle fattening, 2.70 on cow-calf operation and 2.69 on overall average. The average value of capital owned by farmers in conducting livestock farming on beef cattle fattening was higher than cow-calf operation, namely IDR 21,535,000.00>IDR 8,330,000.00, while the overall average was IDR 14,932,500.00. The capital owned by fattening patterns farmers was great enough, because production cost of beef cattle fattening was greater than production cost of cow-calf operation. The converted value of credit collateral in the value of money on beef cattle fattening was also greater than cow-calf operation, namely IDR 72,280,000.00>IDR 45,200,000.00 while the overall average was IDR 58,740,000.00. Collateral is the guarantee that is converted in the value of money handed over to a financial institution or a banking executive as a consequence of receiving credit. Conditions is reflected by the income derived from outside livestock farming which in beef cattle fattening was greater than cow-calf operation, namely IDR 18,106,000.00>IDR 10,775,200.00 while the overall average was IDR 14,440,600.00. Based on the values of 5-C factors, generally indicated that the beef cattle fattening farmers had greater value than the cow-calf operation farm.

The Influencing of 5C Factors to the Rate of Credit Return

Based on multiple linear regression analysis, the influencing of 5C factors to the rate of credit return (fattening pattern and cow-calf pattern) was obtained the following results:

1. The formulation as a probe the influencing of 5 C factors to the value of credit return was:
   Y_{ACR} = - 9.880 + 3.966 Char + 0.145 Cpct + 0.238 Cptl + 0.144 Coll - 0.076 Cond + e
   where
   Y_{ACR} : Ability to credit return (%)
   Char : Character (score)
   Cpct : Capacity (score)
   Cptl : Capital (IDR)
   Coll : Collateral (IDR)
   Cond : Condition (IDR)

Table 3. The Average Value of 5-C Factors on Beef Cattle Farmers

5C Factors	Fattening	Cow-calf	Average
Character (score)	3.37	2.93	3.15
Capacity (score)	2.68	2.70	2.69
Capital (IDR)	21,535,000	8,330,000	14,932,500
Collateral (IDR)	72,280,000	45,200,000	58,740,000
Conditions (IDR)	18,106,000	10,775,200	14,440,600

Based on this equation, it was indicated that character, capacity, capital, and collateral factor had positive correlation to the value of credit return, while condition factor had negative correlation to the value of credit return.

2. Based on Goodness of fit test of regression equations, including simultaneously parameter significance test, partially parameter significance test and coefficient of determination can be described as follows: (i) Simultaneously, 5-C factors had significant effects on the value of farmers' credit return. (ii) Partially, capital and collateral factors had significant effects on the value of farmers' credit return, while character, capacity, and condition factors did not have significant effects on the value of farmers' credit return. (iii) The coefficient of determination was 0.473. It can be interpreted that 47.30% of variations of 5-C factors can explain the variations on credit return factor, while 52.70% variations of 5-C factors can be explained by the other factors which were not included in model.

From this analysis, it can be interpreted that the greater the value of credit collateral and the value of capital owned by farmers, the greater the value of credit return must be paid. So the creditors need to pay attention to capital and collateral factors in order to give credit.

CONCLUSIONS

The average of beef cattle farming income per-year in beef cattle fattening was greater than the cow-calf operation (IDR 8,954,208.00>1,606,786.00), as well as its contribution to the household farmers' income, namely in the beef cattle fattening was 49.45% and in cow-calf operation was 14.91%. The Value of farmers' income on beef cattle fattening was greater than cow-calf operation, and it was also greater than the value of PMW Central Java. The ability to the credit return was 61.75% from the amount of credit IDR 22,482,510.00 which was consist of capital IDR 20,075,000.00 and interest IDR 2,407,510.00. Based on the results of 5-C factors, the character and capacity of farmers were in the adequate category. While the capital measuring by farmers' ability to provide capital was IDR 14,932,500.00, the collateral measuring by the value of credit guarantees was IDR 58,740,000.00 and the condition measuring by income of outside livestock farming was IDR 14,440,600.00. Generally, the capital and collateral factors had significant effects on the value of credit return in beef cattle farming, while character, capacity, and condition factors did not have significant effects on the value of credit return in beef cattle farming.

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