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**THE TEST OF OPINION OF VINDICATION PROCESS
ON PRIMAL WOOD MARKET IN PERIOD
OF BUSINESS RECESSION ON THE EXAMPLE
OF THE REGIONAL DIRECTORATE OF STATE FORESTS
IN POZNAŃ**

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ABSTRACT. The investigations were conducted on the basis of data (approx. 37 000 transactions) collected in the Regional Directorate of State Forests in Poznań. At the time of the study the Directorate consisted of 26 forests inspectorates.

Analyses of the average period of receivables vindication were based on the Days Sales Outstanding (DSO) method. The test of opinion of dynamics wood sale was undertaken, and its structure was also shown. On the basis of the investigations conducted in 1999. Certain decrease in wood sale due to lowered demand occurred in 2002. The size of sale of wood was qualified for subsequent customer categories.

Key words: economics of forestry, marketing, sale of wood, dynamics of sale, structure of sale

Introduction

During the period of socialist economy, when timber trade was fully controlled, economic cycles were enforced by decisions of central controlling organs. After 1989, in the wake of transformations in Poland all types of market instruments associated with economic turnover began to play a key role. The shift from centrally controlled economy to market economy affected all walks of economical life. It brought about completely new marketing possibilities but, at the same time, created real economic threats to subjects participating in the exchange of goods and services on the free market.

One of the safest forms of trade settlements is the cash method. Cash payments are commonly employed in transactions of small value. Contrary to common beliefs, cash settlements do not help to establish long-lasting bonds, cooperation and trust between

partners and represent but a margin of economic activities (**Łabedny et al.** 1992) and that is why cashless systems are recommended to be used in economical practice (**Smol-ski et al.** 1999). In addition, realities of the free market place force manufacturers to enter trade settlements with deferred period of payment.

Granting somebody a commercial credit is associated with economic risks connected with possibilities of losing one's own receivable or, alternatively, with deferred period of their realisation. This phenomenon tends to intensify in definite economic realities, especially unfavourable economic conditions for specific groups of goods.

Keeping agreed terms of repayment of debts plays an extremely important role in business. The most important current problem of companies functioning in market economy is to maintain their financial fluidity, in other words, their ability to pay on time their current liabilities. In a short-time perspective, fluidity decides about the company's survivability on the market. The experience of highly-developed countries shows that the principle cause of bankruptcies of small- and medium-sized companies is loss of their financial fluidity and not losses they suffer. For example, in France about 60% of companies that go bankrupt are enterprises which show sufficient profitability but which lost their capability of current settlement of various payments and liabilities. The proportion of such companies in Great Britain is even higher and ranges from about 75-80% (**Sierpińska and Wędzki** 1997). It is, therefore, very important in free market economy to monitor and control continuously the flow of money resources and respond quickly to alarming economic symptoms.

Methodology

The basic cognitive aim of this study was to assess the process of vindication of liabilities by determining changes in the periods of realisation of financial obligations of customers on the primary timber market in the region of Wielkopolska, or more precisely, in the region administered by the Regional Directorate of State Forests (RDSF) in Poznań. The performed investigations used data obtained from 26 forest districts operating in the RDSF in Poznań. The period of studies covered four years from 1999 to 2002, in other words the period of slump in the timber sector.

The performed investigations involved the analysis of timber sale by determining the level of mean credit sale of timber raw material in individual years as well as during the entire period of investigations. The mean value of the annual timber credit sale deferred period of payment was calculated using the following formula:

$$\overline{Sk} = \frac{\sum_{k=1}^n Sk_r}{Mr} \cdot 100 \quad (1)$$

\overline{Sk} – mean relative timber sale with deferred period of payment in individual years (%),

Sk_r – annual value of timber sale with deferred period of payment,

Mr – total annual sale of timber.

In order to portray changes in the size of the credit sale of timber raw material, the mean level of timber sale with the deferred period of payment for the entire period of investigations was also calculated using the following formula:

$$\overline{Sko} = \frac{\sum_{k=1}^n S_k}{M} \cdot 100 \quad (2)$$

\overline{Sko} – mean relative timber sale with deferred period of payment in the entire period of investigations (%),

S_k – total value of timber sale with deferred period of payment,

M – total value of timber sale in the examined period.

Next, the mean period of liabilities vindication in individual months of the examined forest districts was calculated. In this study, the author used the Days Sales Outstanding (DSO) method of analysis. According to **Carpenter** and **Miller** (1979), this method was developed in the USA in order to show the true information about the real cycle of debt repayment. This method is recommended for use by large, medium as well as small enterprises.

Employing the DSO analysis, it is relatively easy to determine precisely the real cycle of debt repayment by customers. The method can be divided into two groups:

1) DSO_{LIFO} – it allows to assess the collection of liabilities directly in accounting files,

2) DSO_{WAW} – it allows to assess the collection of liabilities on the basis of the time structure of settlements with customers.

For purposes of this study, the author employed the DSO_{LIFO} method. This method is based on synthetic data about sales and receivables in given periods (called layers). In this study, the author adopted monthly layers, together with a variant allowing the introduction of 15-day sub-periods. This variant was applied in the case when receivables from a given month were smaller than the incomes for this month. The discussed method assumes the possibility of determining from which layers the non-paid receivable derive on the basis of the current sales and general receivables derived from different layers.

In order to determine the collection of receivables in a given period, it is essential to calculate from how many layers the receivable derive. Therefore, it is necessary to subject to analysis individual layers going back to the examined period.

$$Lpw = N - \sum_{i=1}^k S_i, \quad i = 1, 2, \dots, k \quad (3)$$

Lpw – difference of receivables from the end of the current period and sum of sales value from consecutive full periods,

N – total current receivables,

S_i – value of sales for the period,

k – number of periods in which the difference of total receivables and the sum of sales value from consecutive is greater than their sale S_{k+1} .

The analysis of previous layers should be continued until the moment when the total sale of layers is lower than the total receivables.

$$N - \sum_{i=1}^k S_i < S_{k+1} \quad (4)$$

The quotient of the number of days in a layer (3) with the full number of layers determines the period from which the unpaid sale derives. There are, however, days from layers which cannot be classified as full periods because part, albeit not in its entirety, of the receivables had been paid. In order to get rid of this problem, the following formula was applied:

$$t \cdot \frac{L_{pw}}{S_{k+1}} \quad (5)$$

t – number of days in a layer.

Having obtained information about full layers and the incomplete period from which the unpaid sale derives, it is possible to calculate the real time during which customers regulate their liabilities.

$$DSO_{LIFO} = t \left(k + \frac{L_{pw}}{S_{k+1}} \right) \quad (6)$$

In some cases, the sale in a given month is greater than the receivables, that is why, in order to determine the real date of payment of receivables, it is necessary to employ partial layers.

Results

The total of 37 042 sale transactions of timber raw material were subjected to detailed financial analyses in the course of the performed investigations. When analysing the financial reports of forest districts, it was found that they resorted to the sale of timber raw material with deferred period of payment. During the entire analysed period, timber worth 517 089 792 PLZ was sold granting commercial credit and this constituted approximately 76% of the entire timber sales. The cash-credit structure of timber sales in all the examined forest districts under the administration of the RDSF in Poznań underwent changes. When analysing this structure in one-year periods, it was found that the proportion of credit transactions decreased (Fig. 1).

The author also carried out calculations which allowed him to estimate the mean vindication period of receivables from timber sales. Taking into consideration all transactions concluded by forest districts belonging to the RDSF in Poznań (including the cash ones), it was possible to calculate that the mean period of debt repayment during the examined period amounted to 32 days. It was found that the period of vindication of receivables for the sold timber changed from 26 days in 1999 to 41 days in 2002. The longest mean period of vindication was observed in 2002 (Fig. 2).

Investigations were conducted which made it possible to determine the mean vindication period of receivable derived from credit sales. Taking into consideration only credit transactions in years 1999-2002, it was calculated that the mean period of vindications of receivables derived from the sale of timber with deferred period of payment

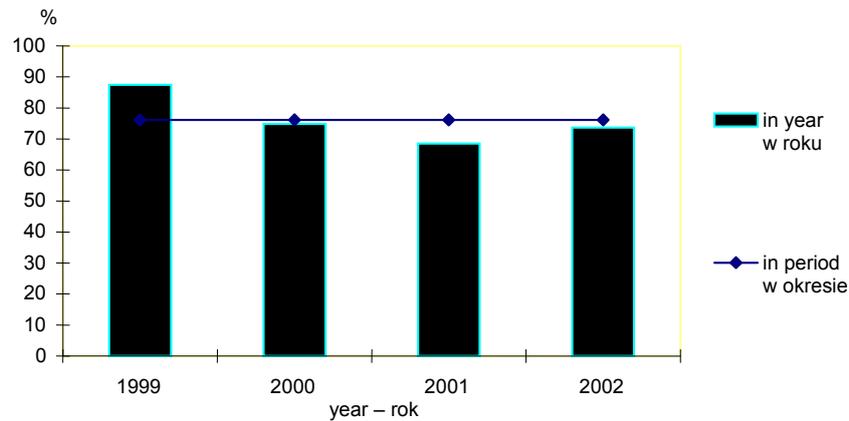


Fig. 1. Proportion of credit transactions in the income from timber sales in forest districts under the administration of the RDSF in Poznań in years 1999-2002
 Ryc. 1. Udział transakcji kredytowych w przychodach ze sprzedaży drewna w nadleśnictwach RDLP w Poznaniu w latach 1999-2002

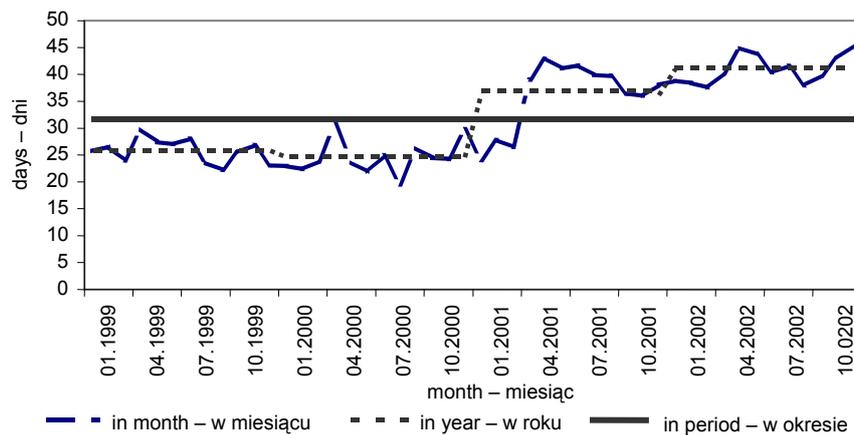


Fig. 2. Mean vindication period of debts from timber sales in forest districts belonging to the Poznań RDSF in years 1999-2002
 Ryc. 2. Przeciętny okres windykacji należności za sprzedaż drewna w nadleśnictwach RDLP w Poznaniu w latach 1999-2002

was 42 days. It was also found that the mean period of vindication of receivables for sold timber increased from 29 days in 1999 to 56 days in 2002.

The author also analysed the process of transformation of current debts into overdue ones. It was calculated that, on average, 23% of receivables were overdue debts. Analysing the dynamics of changes of the mean annual proportion of overdue debts in the receivables which arose as a result of timber sales, it is possible to observe that the proportion of these debts in all receivables increased from 12% to 39% (Fig. 3).

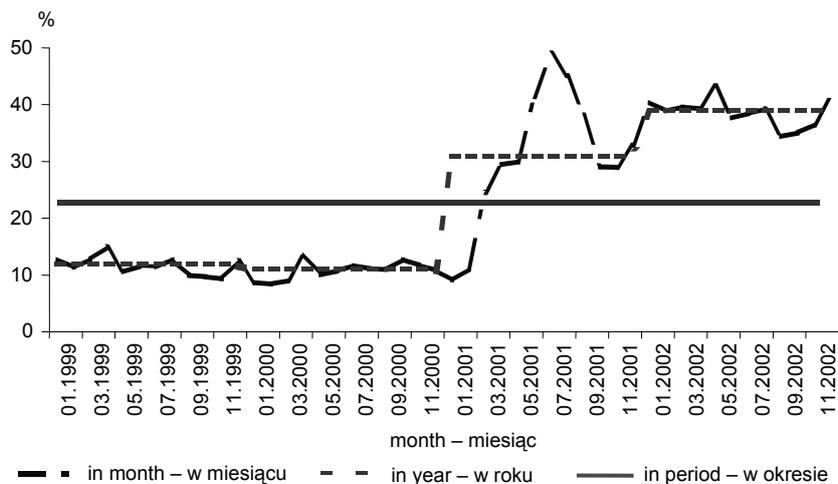


Fig. 3. Relative value of overdue payments in forest districts belonging to the Poznań RDSF in years 1999-2002

Ryc. 3. Względna wielkość należności przeterminowanych w nadleśnictwach RDLP w Poznaniu w latach 1999-2002

Recapitulation

Generally speaking, the majority of wholesale customers buying timber from the individual units of the State Forests enter into agreements with deferred periods of payments. In the case of the analysed RDSF in Poznań in years 1999-2002, the value of credit transactions for timber sales amounted to 517 089 792 PLZ which constituted 76% of the total value of timber sales. It is evident then that the economical activity of forest districts is charged with risk associated with carrying out trade activity of credit character.

The trade policies applied in the forest districts belonging to the RDSF in Poznań in years 1999-2002 aimed to limit the sale of timber for commercial credit as evidenced by the fact that, on average, in 1999, the total of 87% of the timber raw material was sold for credit, while in 2002 – only 74%. A particularly dramatic drop in the share of the value of timber raw material sold for commercial credit was recorded in 2001 (68%) which was probably associated with an exceptionally difficult financial situation of the State Forests caused by recession in the timber sector.

Bearing in mind the economical processes taking place, it seems justified to try and assess the mean vindication period of debts of forest districts belonging to the Poznań RDSF in order to estimate possible signals concerning changes occurring in the vindication process of debts derived from timber sales. It was calculated that the mean period of vindication of receivables in years 1999-2002 from the sale of timbers in the region administered by the Poznań RDSF amounted to 32 days.

Wędzki (2000) claims that the time interval of 7 to 21 days is a convenient period for the realization of receivables by suppliers. However, the Main Statistical Office maintains that, on average, receivable in the national economy are in fact collected only

after 45 days. Therefore, it appears that, in the light of economic realities, the calculated mean period of realization of financial obligations by customers of forest districts is not at all very bad. It is, however, worth emphasizing that during the analysed years 1999-2002 a gradual lengthening of this period from 26 to 41 days took place which indicates a deterioration of vindication conditions of receivables. This process occurred alongside unfavourable economic changes of the analysed period. It is worth emphasising that the period of mean realisation of overdue debts became longer despite decreasing levels of transactions with commercial credit. The worrying process of lengthening of the debt vindication period is further corroborated by the results of investigations concerning the mean period of debt vindication in credit transactions.

The performed investigations allowed the author to characterise the problem associated with the lengthening period of vindication of receivables during the period of slump on the timber market. There is no doubt that prompt vindication is of great importance in business. **Bień** (2002) reported that beginning from 1998 a considerable increase of unpaid debts was observed which, at least partly, can be attributed to the deterioration of the economic conditions leading to the drop of paying capability as well as bankruptcy of many enterprises. However, this is by no means the only cause of payment hold-ups. We continue to observe a high level of real interest rates of bank loans which forces many companies to take advantage of allegedly free commercial credits.

This situation causes that suppliers are faced with unexpected delays in payments for delivered goods and services. In the case of forest districts which belong to the Poznań RDSF, approximately 23% of all debts were converted into overdue receivables. What is worrying is the fact that, when analysing the dynamics of changes of the mean annual proportion of overdue debts in the receivables which developed as a result of timber sales, we can observe some increase in the share of these receivables in their total value.

The author believes that it is necessary to carry out further investigations in the area of debt vindications in different economical situations. The presented paper aimed only at the elucidation of the situation associated with the debt vindication on the primary timber market during the period of slump in the timber sector. That is why the author made no attempt to find any cause-effect relationship between the phenomena of a trade cycle and vindication processes which means that he does not see any need to conduct further research in this area.

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PRÓBA OCENY PROCESU WINDYKACJI NALEŻNOŚCI
NA PIERWOTNYM RYNKU DRZEWNYM
W OKRESIE RECESJI GOSPODARCZEJ
NA PRZYKŁADZIE REGIONALNEJ DYREKCJI LASÓW PAŃSTWOWYCH
W POZNANIU

S t r e s z c z e n i e

W pracy pt. „Próba oceny procesu windykacji należności na pierwotnym rynku drzewnym w okresie recesji gospodarczej na przykładzie Regionalnej Dyrekcji Lasów Państwowych w Poznaniu” podjęto próbę konstruktywnego opisu sytuacji prawno-ekonomicznej związanej z procesem windykacji należności w sektorze leśnym w kontekście sytuacji gospodarczej i spadku koniunktury na drewno. W opracowaniu przedstawiono wyniki badań dotyczących struktury kredytowej pierwotnego rynku drzewnego, terminów windykacji należności oraz proces przekształcania się należności bieżących w należności przeterminowane.