# SOME FACTORS INFLUENCING THE AMOUNT OF FINES FOR FOREST OFFENSES

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*Abstract:* Under the current forest law, the courts can sentence those found guilty committing forest offenses either with fines or imprisonment or both. However, most offenders opted to settle their cases outside the courts by paying compounds. In addition to compounds, the offenders will be also asked to pay compensations, particularly when it involves illegal cutting and removal of timber. The amount of compensations should be related to the volume of timber illegally cut or removed. The State Forestry Officer (SFO) has the final decision on the amount of compounds and compensations. This study investigates the effects of logs price, volume of illegal timber and the role of the SFO on the amount of penalties (compounds and compensations) for forest offenses. Data for the Forest District concerned covering the period 1983 to 2001 were analysed in the study. A linear regression model was developed to determine the effects of logs price and volume of timber on penalties while the ANAVO was run to determine the influence of the SFO. The results show that the price of logs and volume of timber significantly explain the variations in amount of penalties ($F = 14.94$, $p = 0.00$) while the SFO has a significant influence on the amount of compensations and compounds ($p = 0.019$). The implications of these findings are briefly discussed.

## INTRODUCTION

According to the National Forestry Act, 1984, which was adopted by all states in Peninsular Malaysia, any party or individual found guilty committing an offense can be fined or sent to prison or both. In the past, most offenders were fined. The fine comprises two parts, namely compound and compensation. The amount of compound is usually fixed while that of compensation is influenced by the value of the timber illegally removed. However, the final decision on the amounts of compound and compensation lies with the State Forestry Officer (SFO). Therefore, the price and volume of timber and the SFO should influence the amount of fines for forest offenses, particularly for compounded cases.

No studies have been done to identify factors influencing the amount of fines charged for forest offenses. The need for such studies may not be apparent considering that the law provides quite a clear formula for determining the amount of fine. However, while scrutinizing records on forest offenses it was noticed that the amount of fine may not necessarily correspond with the value of timber illegally removed as provided in the law. The SFO may have a great influence on the amount of fine. This study hopes to provide preliminary insight on the effects of the three factors on the amount of fine, particularly compensations.

*Forest Offenses and Punishment*

Forest offense is defined as the act or omission of an act which is punishable under the provisions of the National Forestry Act, 1984. It is an offense, for example, to fell and remove a tree from reserved forest without a valid license and the punishment for such an offense can be as high as RM 500 000 fine and imprisonment for twenty years or both. Likewise, it is also an offense not to cut and remove a tree which has been already marked for felling as prescribed in the license. Violating the provisions of a license may result in its suspension or revocation.

The two main categories of forest offenses which have often been committed by loggers, concessionaires and local people are illegal logging and forest encroachment. Illegal logging simply means felling and removing trees without a valid license and it can take place in several forms, such as felling outside license area, felling to build bridges, felling by the road sides, felling to build roads, and felling below the allowable cutting limits. The maximum penalty for "illegal logging" is either a RM 500 000 fine or a twenty year jail term or both.

Forest encroachment is often committed by local people whereby they go inside the forest, clear the land and later plant crops or vegetables without prior permission from the authority. The penalty such an offense is a RM 10 000 fine or three year jail term or both.

In the past, those who were caught committing illegal logging were not bought to courts for punishment. Instead, the offenders always accepted the offer from the authority to be compounded. Compounding means offering the offender to pay fines that can amount to as much as the maximum fine for the offense. In practice, usually the offenders were asked to pay a fixed amount of money as the compound and certain other amount as compensation. The amount of compensations is related to the market value of the timber removed. The Act stipulates that compounds can only be offered for offences committed for the first time.

## METHODS

Data required for this study were the amount of compensation charged for each of the offenses, volume and price of timber involved, and the state forestry officer in charge at the time the offense was committed. Data on compensations were taken direct from the Register of Offenses kept at the State Forestry Headquarters. The number of trees recorded in the register for each offense was used as a proxy to the volume of logs. Information on the state forestry officer in charge were obtained from the Annual Reports of the State Forestry Department while data on prices of logs were compiled from the Annual Statistical Bulletin of the Federal Forestry Department Headquarters, Kuala Lumpur. Only the annual average logs price was used in the analysis.

A simple linear regression model of the following form was developed to estimate the effects of volume and price of logs on penalty:

$$P = a + b_1 x_1 + b_2 x_2$$

Where:

| | | |
|---|---|---|
| P | = | amount of compensation |
| a | = | constant |
| $b_1 b_2$ | = | regression coefficients |
| $x_1$ | = | number of trees illegally removed |
| $x_2$ | = | average price of log |

In addition, the ANOVA was carried out to determine whether or not the state forestry officer has any effect on the amount of penalty.

## RESULTS AND DISCUSSIONS

*Occurrence of Forest Offenses and Fines*

Table 1 shows the distribution of forest offenses and penalties in the forest district.

Table 1: Forest offenses and penalties in the Forest District, 1983 – 2001

| YEAR | NO OF CASES | COMPOUND | COMPENSATION | TOTAL FINES | MEAN FINES |
|---|---|---|---|---|---|
| 1983 | 6 | 17 000.00 | 101 220.54 | 118 200.54 | 19 703.42 |
| 1984 | 10 | 46 000.00 | 176 202.76 | 222 202.76 | 22 220.28 |
| 1985 | 8 | 35 596.29 | 54 754.82 | 90 351.11 | 11 293.89 |
| 1986 | 5 | 14 500.00 | 9 892.40 | 24 392.40 | 4 878.48 |
| 1987 | 18 | 25 700.00 | 239 341.62 | 265 041.62 | 14 724.53 |
| 1988 | 17 | 28 200.00 | 209 151.63 | 237 351.63 | 13 961.86 |

| 1989 | 34 | 61 000.00 | 305 504.50 | 366 504.50 | 10 779.54 |
| 1990 | 31 | 58 500.00 | 536 737.01 | 595 237.01 | 19 201.19 |
| 1991 | 32 | 52 050.00 | 997 135.57 | 1 049 185.57 | 32 787.05 |
| 1992 | 24 | 63 360.00 | 679 239.47 | 742 599.47 | 30 941.64 |
| 1993 | 17 | 35 130.00 | 315 661.34 | 350 791.34 | 20 634.78 |
| 1994 | 18 | 30 120.00 | 1 006 515.59 | 1 036 635.59 | 57 590.87 |
| 1995 | 26 | 128 204.48 | 1 127 847.16 | 1 256 051.64 | 48 309.68 |
| 1996 | 26 | 616 753.15 | 542 503.04 | 1 159 256.19 | 44 586.78 |
| 1997 | 1 | 2 000.00 | 50536.54 | 7 536.54 | 7 536.54 |
| 1998 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 3 | 211 029.30 | 407 226.45 | 618 225.75 | 206 085.25 |
| 2000 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 3 | 30 189.66 | 28 462.82 | 58 652.48 | 19 550.83 |
| TOTAL | 279 | 1 455 332.88 | 6 742 933.26 | 8 198 266.14 | 29 384.46 |

As can be seen from the table, 279 cases were recorded during the study period giving an average of about 15 cases per year. Nearly 80 percent of the cases involved illegal logging. The amount of compounds and compensations paid totaled slightly more than RM 8 million giving an average annual collection of about RM 430 000.00. The mean penalty per offense was about RM 29 000.00.

The number of offenses was either below average or close to average before the year 1990, increased quite significantly in the early 1990's, remained stable in mid 1990's, and then decreased rapidly in late 1990's. This trend in the occurrence of forest offenses was observed in other studies [2, 3, 4]. The number of offenses increased at the time when the amendments of the National Forestry Act, 1984 were about to be introduced in the state. These amendments introduced stiffer penalties for all forest offenses.

The mean amount of fine per offense increased quite substantially beginning in 1994. There can be due to many reasons one of which could be the increase in penalty as prescribed in the amendments of the Act.

An important point to note is that the amount of money collected through compounds and compensations was quite substantial. Such collections could very well be a significant source of income to the state government. Thus, the authority should ensure that the system of charging and collection of compounds and compensations for forest offenses be judiciously enforced. If properly enforced, such a system not only ensures revenue for the state but also acts as a deterrent for future offenders.

*Effects of Number of Trees and Price of Logs on Compensations*

Table 2 shows the results of the regression analysis on the effects of number of trees and price of logs on compensations paid. The results show that both the number of trees and price of logs significantly affect the amount of compensations. However, number of trees and average price of logs only explain about 50% of the variation in the amount of compensations. In means, there are other factors which affect the amount of compensations charged.

Table 2: Regression analysis on effects log's price and volume on compensations

| | Unstandardised coefficients | | | |
| --- | --- | --- | --- | --- |
| | β | Std. Error | t | Sig |
| Constant | - 10746.60 | 7 221.54 | - 1. 488 | 0.147 |
| No. of trees | 227.28 | 49.61 | 4.581 | 0.00 |
| Logs price | 45.39 | 19.63 | 2.312 | 0.02 |

$F = 14.949 \qquad p = 0.00$
$R^2 = 0.490$

The coefficient of determination ($R^2$) could have been bigger if data on volume of timber actually removed are used in the analysis instead of data on the number of trees. As mentioned earlier, the amount of compensations is very much a factor of the volume of timber removed. The number of trees may not be correlated with volume.

*Effects of SFO on Compensations*

Table 3 shows the data on total and mean amount of compensations charged by the respective SFOs during the study period. It can be seen that mean compensation increases steadily from the first to the last SFO. The mean compensations during the tenure of SFOs 1 and 2 are expected to be lower than those for SFOs 3,4 and 5 since the penalty for illegal logging was increased many times some time during the tenure of SFO number 3. Nonetheless, there are big differences in mean compensations during the tenure of the last three SFOs.

Table 3: Mean compensation per offense for illegal logging by SFO

| SFO | Total cases | Total compensation | Mean compensation |
|-----|-------------|--------------------|--------------------|
| 1 | 50 | 697 163.44 | 13 943.27 |
| 2 | 80 | 1 785 005.88 | 22 312.57 |
| 3 | 30 | 1 137 672.34 | 37 922.41 |
| 4 | 41 | 2 212 488.48 | 53 963.13 |
| 5 | 14 | 905 603.12 | 64 685.94 |

Table 4 shows the results of the ANOVA on effects of SFO on compensations for illegal logging cases. The results show that there are significant differences in the amount of compensations per offense charged by the SFOs.

Table 4: Effects of SFO on compensations for illegal logging

| | Sum of Squares | df | F | Sig |
|-----|----------------|-----|------|-----|
| Between Groups Within Groups | 6.73E + 10 | 4 | 3.031 | 0.019 |
| Total | 1.09E + 12 | 196 | | |
| | 1.15E + 12 | 200 | | |

The above results point to the fact that SFOs can play important roles in the decision to determine the amount of compensations. The finding is not surprising since the law gives the final authority to the SFO to decide on the amount of compensations. Nevertheless, it should be enlightening to find out what factors influence the SFO's decision on the amount of compensations. A similar question would be 'what factors influence judges' decisions on cases that have been brought to the courts?' A preliminary investigation on the subject was done by Miskon (2003) [1].

## CONCLUSION

Forest offenses, such as illegal logging, can upset the planning of sustainable forest management particularly if they involve the removal of large volume of timber. The forestry authority must implement measures that would curb the occurrence of such offenses. One of these measures is through the penalty system. The penalties charged for these offenses must commensurate with the degree of their severity. One measure of severity is the value of timber involved in the illegal activity. In this context, the higher the value of timber removed the higher should be the penalty. The study shows that the authority is already implementing this measure.

The money collected through penalties charged can present a significant source of income to the state government. In this context, it is important for the state forest authority to maximise the penalty

charged once an offense is committed. The law empowers the authority to do so and it should be in the interest of the state as well as the forest that such authority is judiciously exercised.

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