ECONOMIC ANALYSIS OF THE CRIMINAL OFFENCE

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Abstract: With establishing the Economic Analysis of Law, the conditions have been created for applying the economy in the analysis of legal institutes, which were intangible until its appearance. The topic of the paper is economic analysis of the criminal offense, the effect of punishment on the perpetrator and the implications of crime on individual well-being and social welfare. While the law insists that the perpetrator of the criminal offense be found, prosecuted and adequately punished, the economy analyzes the level of costs that the offense causes. The forcible transfer, destruction of wealth, opportunity costs of resources that crime absorbs reduces the welfare of victims as well as society. Subsequently to material damages, criminal offenses also cause non-material damage. In this paper we use the economic models that the economy developed in the analysis of criminal offence.

Keywords: *criminal offense, individual well-being, social welfare, opportunity costs, damages, punishments.*

INTRODUCTION

With the development of the Economic Analysis of Law it is pointed out on the importance of analyzing legal institutes, applying economic methods and models, as in analyzing the legal system in general, as well as in certain areas of the law. Although disputed, and in some countries still insufficiently present and applied, economic analysis of law is a scientific discipline and its development and application, in its full extent, is just expected to happen. Unlike in Europe where the interest in economic analysis of the law is less, and the progress is slower, in the United States of America economic analysis of law has become a dominant discipline, which is why many aspects of its analysis are characterized by specifics characteristic in the precedent law.

Economic analysis of law connects two mutually conditioned and important areas of human action, enabling them into better understanding. Combining eco-

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nomic life with legal principles and the application of economic methods in the branches of law that have economic thinking (labor law, tax law), as well as in those that they don't have it in its basis (criminal law, civil law), economic analysis of law perceive the law from a new angle and in a new way. Observed from the economic point of view, law represents a stimulating system which influence can be, on behavior of individuals, positive and also negative. Stimulations are related both to their economic activity and to actions that are not in accordance with the law or they represent its violation.

Economic crime analysis determines the reasons why the perpetrators of criminal offense decide to commit a crime, as well as the stimulations that the legal rules create for the potential perpetrators of criminal offenses. The topic of the paper is an analysis of criminal acts and the consequences that such actions caused from the economic point of view.

This paper analyses the penal system by indicating on economically justified punishments, but also indicates the way that the amount of resources absorbed by the area of a crime and the activities on its suppression could be corrected. The basic criterion for evaluating the effectiveness of the penal system represents a level of social welfare.

BASIC QUESTIONS OF ECONOMIC CRIMINAL ANALYSIS

The fact is that the criminal offence, above all, is the legal institute, and it imposes the question of why is it the subject of economic analysis, respectively reasons are being sought for the inclusion of the economy in the field of crime and criminal law. There are several reasons for the interest of economy in this field, and one of the most important is that the criminal acts significantly influence the individual well-being of the victims, respectively those persons who are directly affected by the criminal offence, but also has significantly effect on social welfare. By individual well-being we mean the level of usefulness that an individual enjoys in all that provides them a sense of satisfaction, while social welfare represents the sum of individual well-being (Popović, 2009: 3). The greatest burden of the criminal offense and its consequences are born by the victims, but a part of the burden is transferred to the society as a whole. In order to protect citizens and their rights, the state must provide an efficient model of financing the police, the judiciary, etc. which absorbs the budget funds, thereby transferring the burden of the committed criminal offense to all social subjects, respectively taxpayers.

Although the legislator has made a significant efforts to prevent and reduce the volume and types of criminal offences, we indirectly daily witness crimes that for result have material or non-material damage, and very often both. The perennial economic crisis, the impoverishment of a large part of the population, the high unemployment rate and the inability to meet the existential needs which signify the end of the 20th and the beginning of the 21st century in our country, have caused the increase of crime rate and hence the number of criminal offences take dramatic volume and dynamics. Modern living conditions and accelerated technological development have created the conditions for the phenomenon of cybercrime, and the increase of crime is also contributed by the increased threat to global security which is personalized in and by terrorism.

The question of crime is contemporary and significant for the theory and practice that the crime considers as a challenge, as well as for everyday life, from a reason that most of the people sees crime as a danger to well-being, wealth, and even life (Cooter and Ulen, 2016: 454).

The basic criminal law issues, which are subject to the economic analysis, are related to the definition of the acts that should be prevented, prohibited or punished, and adequate penalties to sanction them. Determination of the penalties and their effects on the behavior and volition of perpetrators of criminal offense is one of the most important issues in the society, respectively of the legislative and the executive authorities (Cooter and Ulen, 2016: 454).

Although the theory of a crime was the subject of analysis, even before the appearance of Becker (Becker) and his article published in 1968, when his conceptual framework was put in place. The decision of the potential perpetrator of the criminal offense according to the model elaborated in the article is determined by the potential benefits and costs expected from the commission of the criminal offense.

The baseline of the Baker's model relates to the *rationality* in the behavior of individuals, expressed in the aspiration to achieve benefit in its maximum. Considering that dealing with crime is a risky activity with an uncertain outcome, it is aimed in maximizing the expected value (Becker, 1968). The term *expected benefit*, and not the *benefit* indicates uncertainty, because the perpetrator of the criminal offence can't have knowledge whether or not have they will benefit from the crime. The assumption of a rationale for a decision maker is the basis for defining economic models and economic theory in general, whereby rationality implies stable and transitory preferences of decision makers. (Begović, Labus and Jovanović, 2008). Behavior of the perpetrator of a criminal offense can be considered rational if he behaves in a manner that maximizes his own advantage.

The assumption of the rationality of the perpetrator of the criminal offence is subject to criticism. There is a doubt about the rationality of decision making and raises the question of what kind of rationality is that if the perpetrators commit serious crimes. Observed from the society angle and from the vast majority of individuals there is no rationality. But the rationality in decision making by the perpetrators of the criminal offense is not in the interests of the society, but it is in the benefits that the perpetrator of the criminal offence accomplishes. If the object of the perpetrator of the criminal offense is a material benefit, which if they commit could usurp it, then the decision to do so is rational. In addition to the material benefits, the commission of a criminal offense can increase the psychological benefit of the perpetrator of the damage, and the decision to commit a criminal offence from the perspective of the perpetrator of the offense is rational (Begović, 2015: 27).

The second assumption of the Baker's model refers to the lack of moral limitations of the perpetrator of the criminal offence (Becker, 1968). While a person strives to freedom in its widest sense, the moral limitations that each of one has in themselves constitute a limiting factor in the decision to commit a crime or not to , regardless of the incentives created by the system. On the other hand, individuals who don't have a problem to violate moral norms regardless of systemic constraints appear as perpetrators of criminal offenses.

The decision of the potential perpetrator of a criminal offense to commit a crime is influenced by several factors. The decision is determined by the level of the expected value of the criminal offense, but also with the expected value of performing legal activities. The expected benefit from the criminal offense in Becker's model is represented by the expression:

$$EU_j = p_j U\,(Yj - f\,j) + (1 - pj)\,U\,(Yj) \tag{1.1}$$

[2]

If we exclude, from the previous condition, the penalty imposed for performing the activity *(f)*, we receive the expected usefulness of the individual from the activity that is in accordance with the law.

$$EU_j = p_i U\,(Yi) + (1 - pi)\,U(Yi) = U\,(Yi), \text{ where it is } i \neq j \tag{1.2}$$

Since the starting assumption of the model is the rationality of the individual, the potential perpetrator of the criminal offence, by comparing these values, will determine which of them brings a higher level of usefulness and in accordance to that will make a choice.

In economic literature, attitudes have been developed according to which the level of crime is in the function of probability of capturing perpetrators of the criminal offense and imposed penalty. A number of studies, that for the subject of the analysis have had the impact of these factors on the level of crime, have established a link between these values. The increased expectancy of being caught and bearing the consequences of the criminal acts they caused reduced the crime rate. Ann Witte has analyzed the impact of the probability of arrest and the severity of sentences on former convicts 3 years after their release from prison. The analysis

2 The markings in the model are presented*:* *E* - expected value, *U* - useful function of the potential perpetrator of the criminal offense, *Yj* - total value of the committed criminal offense (it may be monetary, but also represent some of the form of satisfaction), *fj* - monetary equivalent to the penalties foreseen by the law for the committed criminal offence (expressed in amount that the perpetrator of the criminal offense is prepared to pay in order to avoid punishment), *pj*-the probability of punishing the perpetrator of the crime.

included a sample of 641 men, and the obtained results indicated a link between imposed penalties and crime rates (Witte, 1980).

Ehrlich's analysis of the robbery in the USA in the period from 1940 to 1960 established the link between the probability that perpetrators of the criminal offense would be caught and punished and distract from dealing with crime (Ehrlich, 1973).

Ehrlich in his model, which is a modified Baker's model, pointed out to the benefits of legal and criminal activities and included the leisure as a possibility of allocating workforce. According to the model, the perpetrator of the criminal offense generates income from legal or criminal activities, where the level of net incomes is in the function of engaging time spent in each of the activities. The balanced offer of crime which was analyzed by Ehrlich is presented graphically between points A and B which show the level of income if the total time is engaged in performing one of the activities (legal or criminal). In the case where the limiting value of the penalty doesn't exceed the difference between the limiting values of the above mentioned activities, the balance is established as an extreme solution, since the total working hours of the potential perpetrators of criminal offenses is allocated to the conduct of criminal activities (Begović, 2015).

The amount of the composite goods is shown on the axis, which includes the total benefits from the performance of the mentioned activities, respectively financial and psychical benefits from the engagement.

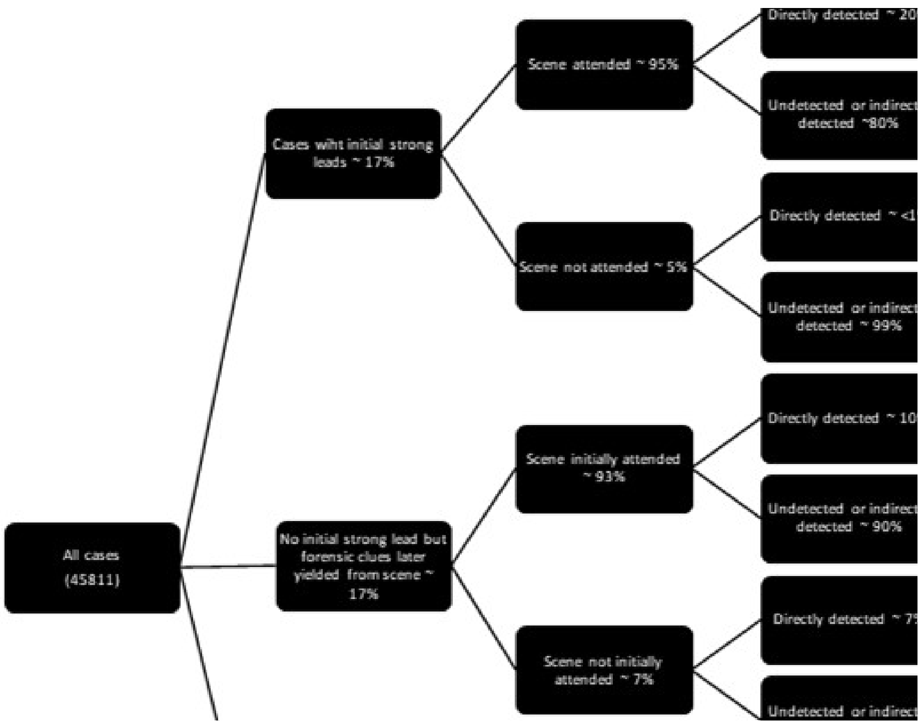

Chart 1. *Balanced crime offer*

The quantity of the composite good $X_{b} = W' + W_i(t_i) + W_l(t_l)$ represents the benefit that is obtained in the case of probability $1\text{-}p_i$, respectively, $X_{a} = W' + W_i(t_i) - F_i(t_i) + W_l(t_l)$ in case of probability p. The total expected benefit is the value of a good that is obtained by criminal activity corrected by the probability of punishment if the perpetrator of the criminal offense is discovered.

The Ehrlich's model is an unavoidable basis for the economic analysis of crime.

Decision of a potential offender to commit a criminal offense besides to the above mentioned factors is influenced by the *asymmetry* of *information* and tendency to *risk* (Labus, Begović and Jovanović, 2008: 359 and 375).

Due to the fact that they do not have sufficient or adequate information about the likelihood of being caught and punished, but also with the penalties, the potential perpetrators of the damage are often too optimistic in making decision to commit a criminal offense. If individuals are open to risky behavior, decision to commit a criminal offence will be made easier and vice versa.

Decision to commit a criminal offense is determined by a number of factors. The ability to affect some of them is limited or such action can be accomplished during a long period of time. This implies to social changes, the creation of an economic environment in which working within legal activities can generate greater benefits than in criminal areas, etc. The probability that they will be caught and punished and that they will bear the consequences for their behavior, as well as determining the penalties that will discourage potential perpetrators of committing a criminal offense may be effective in a shorter period. Increasing the capacity of the police, increasing the efficiency of the judiciary, and increasing the amount of penalties are some of the measures that create stimulus for individuals not to deal with crime.

PRIVATE AND SOCIAL COSTS OF CRIMINAL OFFENCES

Committed criminal offences cause costs in terms of destroyed property or loss that are conditioned by violation of subjective rights of individuals, as well as social costs related to *prevention* and *hinder* of crime. By economic analysis of the criminal act of burglary, we point out to the legal and economic consequences of this act on individual and social welfare.

The starting assumption of the analysis is that the burglary has occurred in the house and that on that occasion the owner was damaged (picture, technical device, etc.) in the amount of 5,000 euros. The owner received the stolen object-property as a gift from his parents and for emotional reasons (affection) he valued the stolen object more than its real market value, more precisely for 7,000 euros. The burglars wanted to get rid of the stolen goods as soon as possible and they sold it on the "black market" below the market value, more specifically for 2,000 euros. Since the value was not reallocated on voluntarily basis, it is considered as a *forced transfer*. In addition to the losses arising from the forced transfer, the consequence of the committed criminal offence represents *destruction of the wealth* of the owner, because when entering the house, a window (or door) was destroyed through which the burglar had entered the house. In that manner, the value of the wealth of the owner of the house was reduced, as well as the total social wealth as the destruction did not increase the wealth of the burglars. Destroying the door or window was not the target of the burglars. The intention was on the path of achieving the goal, that is, stealing the property that was in the house.

The reduction of social welfare due to the committed criminal offense also arises from the resources involved in burglary. Thus, the resources that the crimes absorb have *opportunely* cost, which mean that their use for productive purposes can create a new value. Resources relate to the burglar who represents a workforce whose engagement in legal activities could create a value that would increase the level of social welfare, as well as the resources spent by the burglar to acquire knowledge and skills in order to be able to do burglaries successfully.

In addition to the mentioned costs of resources that have been caused by criminal offences, it is important to point out to the resources involved in the combat against crime. In this case of burglary the engaged resources are being used in the way that burglar could be found, processed and adequately punished, which means the involvement of the police and the judiciary. Hence, after the report of the committed criminal offence, the police collect the evidence and engage in searching and detaining of the burglar. After finding the burglar, a new amount of resources in the field of justice is being engaged, in order to determine their responsibility and impose an adequate punishment. If the decision of the court determines the responsibility of the burglar, a punishment for the respective criminal offence is a prison sentence, which means that a new amount of resources is being engaged, within prison capacities, in engagement of staff, psychologists, nutrition needs of prisoners, health care, etc. According to an assessment which has been done in the USA, the direct costs of safekeeping of one prisoner are in amount of 40,000 $ per year. The amount increases if the prisoners are over 55 years old (due to the cost of treatment) and it cost up to 100,000 $ (Cooter and Ulen, 2016).

The above mentioned example of the criminal offense of burglary is pointed out from a reason of the economic aspect of one criminal offense. A large number of committed crimes during the year multiplies the amount of engaged resources and increases the cost of society, but also involves the engagement of a large number of individuals. According to the official data of the Republic Institute for Statistics in Serbia, in 2017 90,348 adult criminal offenders were registered (2019). The number of criminal offenders does not show the number of crimes, as there is no functional connection between the committed criminal offenses and the offender. This means that one individual can be a perpetrator of more than one criminal offense, but also one criminal offense can be committed by more than one individual. The basis for the disagreement in the number of committed criminal offenses and the number of perpetrators is the judicial statistics, which basic unit of observation is an individual (Begović, 2012). The data indicate the fact that a significant part of the labor productive population of Serbia is not included in economic activities where the level of well-being can be increased.

The concept of economic analysis of the crime indicates the need to reduce the amount of resources engaged in crime. Reduction can be achieved *ex ante*, which means preventive action that implies in investments and increased efficiency of the judicial system, as well as increased police capacities, or *ex post* approach, which implies remedying the consequences of criminal offenses. As the loss of serious crimes (murders) couldn't be repaired or compensated, allocation of resources in preventive is a rational choice. Preventive action on reduction of criminal offences allows general prevention, but also increases the level of security in society and trust in institutions.

GOALS AND EFFECTS OF PUNISHMENT-ECONOMIC ASPECT

The committed criminal offence represents an unlawful act which implies the punishment of the perpetrator. Numerous rules which provide the punishment of a perpetrator of a criminal offense are defined in the form of laws, regulations, etc. have the aim that perpetrator of a criminal offense to pay the "price" of his conduct, respectively for the act committed. The level of punishment for the committed criminal offense should be in accordance with the severity of a crime. Conversely, if the perpetrator of the criminal offense does not bear the burden of their behavior, or if the value that they benefit from the committed criminal offence is greater than penalty they pay, the stimulus will be missing in order to stop those acts in the future.

Modern criminal justice systems see the main purpose of punishment in: *retribution, disabling, special prevention, resocialization* (Shavell, 2004).

The purpose of the *retribution* is to determine the punishment by which the usefulness of the perpetrator of the criminal offence is reduced. It could be established a connection between the reduced usefulness of the perpetrator of the criminal offense and the usefulness of the victim, so that the increase in the usefulness of the victim will be the result of a decreasing the usefulness of the perpetrator of crime (Begović, 2015). The economy indicates the level of the total costs of the committed criminal offense and the necessity of determining a penalty which, in addition to the costs of direct victims, should include the costs of third parties and the total social costs.

With *disabling,* as a punishing mechanism, the perpetrator of the criminal offense is physically prevented from repeating the criminal offense. This type of punishment represents a prison sentence. Physical disabling of the perpetrator has its advantages, in order to reduce the possibility that the crime will repeat, but also has its disadvantages, as it enable the acquiring of new knowledge in the field of crime. Due to the large amount of resources that imprisonment absorbs, it represents an economically ineffective way of punishment, and it should be replaced by alternative penalties whenever the purpose of punishment allows it.

The relatively modest effects of prison sentences and the significant amount of resources that prison facilities cause it also conditioned the emergence of new penalties known as *alternative* sanctions. In 1986, the European Union recognized the need to find alternatives to imprisonment by defining *modified institutional sanctions* and *noninstitutionalized* sanctions (Stevanović, 2012: 213). Observed from the economic point of view, the financial form of punishment, i.e. fines, represent an alternative to penalty set by the law, and it should be used in cases (except for the most serious crimes) in which it can be adjudged. Benefits of financial punishments are reflected in the zero transfer costs and the reduction of budget expenditures.

The excessively number of prisoners and the constant need for new prison facilities, as well as the insisting on human rights and increased demands for better conditions in prisons has influenced finding a solution which caused that punishment by imprisonment is applied only when all other possibilities of the punishment are exhausted. By applying alternative sanctions, financial sanctions, even in the criminal acts for which are foreseen the life sentences, as well as the procedures in which the prosecutor communicates directly with the perpetrator of the criminal offense, the Netherlands significantly reduced the number of adjudicated sentences (Radojković, 2014).

In the 1980s, the Netherlands had 23 prisoners on 100,000 citizens, and in 2008 the number reached 130 prisoners on 100,000. This increase in prison sentences exceeded the existing prison capacities by 23% and represented a clear signal that the problem must be solved systematically (Allen 2012: 13). In addition to the above mentioned measures, the solution to this was probation, shorter prison sentences, etc. the Republic of Serbia, has 142 prisoners on 100,000 inhabitants, and it is 2.5 times smaller population and about 20 times smaller gross domestic product, and should apply the experience of the Netherlands and other countries, also adapting to the characteristics of our penal and judicial system.

Special prevention means the application of sanctions in discouraging a persons from dealing with the crime who have already committed a criminal offense and on which these measures have already been implemented (Begović, 2015: 88).

The establishment of the goals *of resocialization* related to the correction, re-education or adaptation of potential perpetrators of criminal offenses is a justified concept. Accomplishing the resocialization and "returning" of members of society who have "slipped" from it is difficult, and often impossible (Atanacković, 1988: 130). With rationalization the convicted perpetrators of crime are referred to education (Knežević, 2017) in order to increase their human capacity that allows them to earn income from activities that are in accordance with the law, thereby reducing the possibility of their return to crime. In addition to education in the process of re-socialization, the morale of the convicts is being developed and moral restrictions incorporated (Begović, 2015).

The number of factors influencing the decision to commit the criminal offence and the number of factors at which the level of crime is determined indicates the possibility of action on each of them in order to bring crime to a socially acceptable level, which would reduce the amount of resources that crime absorbs. The decision on selection of punishment for the perpetrator of a criminal offence in addition to the requirements for justice and equity, should be adopted in accordance with the principle of efficiency.

CONCLUSION

Punishment and criminal repression are a necessity. The legal rules, the severity of sentences, as well as the increased probability that they will bear the consequences of their actions, create stimulus for potential perpetrators of criminal acts to choose not to be engaged in criminal activities. By selecting an adequate penal system, the level of resources that this area absorbs can be significantly reduced. The economic analysis of rights in the field of crime, the traditional understanding of law and the establishment of punishments, based on justice and equity, is expanded by the economic resonance, or by applying the criteria of efficiency, because the achieving of justice and equity has its own cost. From the economic point of view from the solution is effective, but also lawful, if it increases the level of individual and thus the level of social well-being.

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