

## Summary

Considerable costs are incurred in relation to crime. The authorities spend money on the prevention, detection, persecution, trial and punishment of criminals. Crime also leads to material and immaterial (emotional) costs for those who have become a victim of it, such as goods that have been stolen or the fact that victims feel less at ease since the offence took place. Therefore, the government invests in all kinds of programmes that are aimed at preventing crime, lowering crime rates and lessening the societal costs of crime. An insight into the cost effectiveness of programmes such as these provides decision-supporting information with regard to the question as to which programmes can best be deployed by the authorities. After all, the means for crime fighting are limited. Therefore, by definition, choices have to be made regarding the best possible use of these means.

For studies of cost effectiveness, three parameters are needed: the costs of the intervention, the effect of the intervention and the benefits of the intervention. The benefits of the intervention are the costs that were prevented (such as the financial damage, product loss, harm and costs of the judicial chain) because an offence was not committed thanks to the intervention. The first two parameters differ per intervention and there is no general way of determining them. The benefits of an intervention, however, are generic. This research shows how these benefits can be calculated for ten types of offences.

This summary starts out with a description of the offence typology that was used in this research. Subsequently, the methods are described that can be used to gain an insight into the number of offences that are committed in the Netherlands and into the costs of these offences. The summary ends with the actual determination of the costs of various offences. With regard to this, it should be noted that existing data sources were used in this research to quantify the aforementioned costs. Since existing data in some cases are insufficiently accurate to be able to make a definite statement regarding the costs per offence, the amounts per offence calculated in this report are subject to some uncertainty.

### **What offence typology has to be chosen?**

There are two important sources of information concerning the costs of crime: the crime victim survey and the registrations within the judicial chain. Both sources use a different offence typology. The point of departure in determining an offence typology for establishing the costs of crime is that a category should be distinguished in a crime victim survey as well as in the judicial registrations (regarding offences that involve victims). If we perform this exercise, only a limited number of offence types remain. This is due to the fact that the typologies of both sources differ from one another considerably. The remaining categories are:<sup>2</sup>

- 1) Murder and manslaughter
- 2) Sexual offences
- 3) Property crimes
- 4) Assault and battery

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<sup>2</sup> Addendum 2 specifies what offences in the crime victim surveys and the CBS registration belong to what category.

- 5) Threats
- 6) Vandalism and public order
- 7) Traffic offences
- 8) Drug offences
- 9) Economic offences
- 10) Other offences

### **What methods are available for determining the ratio between registered and unregistered crimes?**

Only a fraction of all offences committed are known to the police. Victims of an offence do not always file charges. Offences that don't involve victims are only known to the police if the police detect the offence. Therefore, police records offer an underestimate of the total number of offences committed. Some studies use multipliers to arrive at an estimate of the total number of offences committed, based on police records.

The first thing that can be learned from this research is that the application of multipliers to determine the total number of offences is unnecessary in many cases. With regard to methods for determining the number of offences, a distinction should be made between offences with and without victims. The simplest, and probably also the most accurate, approach in the case of offences that involve victims is to directly use information from crime victim surveys. The number of victims of an offence is then extrapolated to the national total by using the chances of being drawn (the number of respondents in the crime victim survey divided by the number of inhabitants of the Netherlands). In that case, multipliers aren't necessary.

By definition, offences without victims can't be determined on the basis of crime victim surveys. There are statistic techniques to come to an estimate of the number of offences that haven't been detected, such as the capture/recapture method. The capture/recapture method has its roots in biology and was used to count populations of wild animals. Animals were captured, marked with a number and then let go again. Some of them were recaptured. Since the animals had been numbered, it was possible to establish whether or not each animal had been captured before. Using this technique, biologists gained an insight into the size of a population of wild animals. By using assumptions regarding the chances of an animal getting caught once, several times or not at all, the number of animals that were never caught could be included in the estimate. This method can also be used to determine the number of offences without victims.

### **What methods are available to determine the costs of crime?**

In general, the costs of crime are determined by three steps. In the first step, the range of the research is established: from what perspective are costs included and within what timeframe are they assessed? The perspective determines which costs are included. Usually, cost effectiveness and cost-benefit analyses are performed from a societal perspective (Eigenraam et al., 2000). A point of discussion is to what extent the offender's costs and benefits should be included. If the offender is not placed outside of society, theft does not lead to societal costs but to a redistribution of goods.

The second step involves determining the various cost factors that can be distinguished. With regard to crime, costs are made in anticipation of an offence (preventive measures and insurances), as a result of an offence (the value of stolen goods, product loss, the costs of health care and the costs of harm) and in response to an offence (the costs of police and the judicial

system). Not all costs are relevant to all offences. Preventive measures and insurances are primarily deployed to prevent property crimes and vandalism. Damage as a result of an offence almost exclusively happens in the case of offences involving a victim. Damage in response to a criminal act is suffered for all types of offences.

In the final step, the actual extent of the costs that were determined in the previous step is established. Most researchers opt for a pragmatic approach: the choice for a specific method is primarily driven by the data that are available. Therefore, crime victim surveys are the point of departure for most cost factors. In crime victim surveys, respondents can be asked how much money they spend on prevention, what financial damages they have suffered, to what degree medical costs were made and if work absence resulted. Therefore, little variation exists regarding the methodology applied to determine these costs.

In contrast, the variation is all the greater when it comes to determining the costs of harm. Three trends exist: stated preference research, revealed preference research and the QALY method. Stated preference researchers ask people about their willingness to pay: how many Euros would you be willing to spend to decrease the number of thefts in your neighbourhood by 10%? Revealed preference methods look at people's actual behaviour. The money spent on prevention, for instance, is an indication of people's willingness to pay. Nowadays, a method stemming from the medical world is being applied increasingly, which is the Quality Adjusted Life Year (QALY) method. The costs of harm are then determined exclusively by the resulting decrease in the physical and mental state of an individual who has become the victim of a criminal offence.

#### **What are the costs of crime?**

We have chosen a pragmatic approach to determining the costs per offence: the available data were the guiding factor for the methods applied. The number of offences was determined on the basis of crime victim surveys for offences with victims and with help from the capture/recapture method in the case of offences without victims. The costs made in anticipation of crime and the costs resulting from crime are based primarily on crime victim surveys. For quantifying the costs of harm, we have used the QALY method. The costs in response to crime were largely determined by using indicators of the involved actors' time expenditure. The Public Prosecutor, for instance, spends twice as much time on a summons for a single-judge division than on a settlement.

It then turns out that in 2005 more than 11 million offences were committed in the Netherlands. Property crimes were committed the most by far, see table S.1. The category of murder and manslaughter has the lowest number of offences by far.

Table S.1 Number of offences committed in 2005

	Number of offences x 1,000
Murder and manslaughter	174
Sexual offences	181,000
Property crimes	6,089,000
Assault and battery	254,000
Threats	867,000
Vandalism and public order	3,020,000
Traffic offences	753,000
Economic offences	81,000
Drug offences	382,000
Other offences	82,000

In this research we have made use of existing data sources. Since existing data in some cases are insufficiently accurate to be able to make a definite statement regarding the costs per offence, the amounts per offence calculated in this report are subject to some uncertainty. Bearing this in mind, it was found that crimes committed in 2005 have cost society a minimum of € 20.2 billion. Not all of this regards costs that can be retrieved from various cost estimates. In this research we have put a price on immaterial costs as well.

Table S.2 provides an overview of the various cost factors. The bottom line enables a comparison between the various cost factors. It shows that harm is the biggest cost factor by far: almost half of the costs are caused by harm to the victims. Damages resulting from stolen or destroyed goods and loss of production are substantial cost factors as well. The final column enables a comparison between the costs of different types of offences. Property crimes result in the most damage. This is primarily due to the relatively high number of property crimes committed.

It should be emphasised that € 20.2 billion is, most likely, an underestimate of the total costs of crime. We were not able to quantify all cost factors. Apart from the costs mentioned in table S.2, crime also leads to costs because of:

- behavioural changes due to fear of victimisation
- vandalism of public spaces
- production loss of volunteers
- production loss due to emotional damage
- use of mental healthcare
- harm to offender's and victim's family, friends and acquaintances

Furthermore, it turned out to be impossible to find out all of the costs for all types of offences, even though the data should be available. A good example of this is in the case of sexual offences. Victims of sexual offences have indicated in the crime victim survey that they do not wish to make use of medical help. In our approach, this leads to the assumption that sexual offences have not led to production loss. This seems to be in conflict with reality. The costs of production loss determined in this way very probably are an underestimate of the actual costs of production loss and the medical costs. The emotional consequences of a crime – especially in the

case of traumatic crimes such as acts of indecency or violence – can result in work absence as well. It is also quite possible that victims of sexual offences prefer not to mention this and, therefore, also not report their medical treatments in a crime victim survey. However, we possess insufficient information to be able to make plausible assumptions with regard to this.

**Table S.2 Total costs of offences committed in 2005, in millions of Euros**

	Prevention		Consequence				Response					
	Prevention	Insurance	Damage	Production loss	Medical costs	Harm	Detection and prevention	Persecution	Trial	Enforcement	Support	Total
Murder and manslaughter	0	0	0	120	0	289	0.3	1	2	141	0	554
Sexual offences	0	0	0	0	0	322	9	11	13	109	2	466
Property crimes	2,988	275	2,767	0	0	3,860	1,094	123	125	634	6	11,872
Assault and battery	0	0	0	15	36	1,027	29	49	46	196	3	1,401
Threats	0	0	0	0	0	2,128	99	15	14	33	10	2,299
Vandalism, public order	0	178	829	0	0	840	305	47	31	167	0	2,397
Traffic offences	0	43	140	11	54	177	185	57	49	16	0	732
Economic offences	0	0	0	0	0	0	6	25	12	1	0	44
Drugs offences	0	0	0	0	0	0	22	35	29	167	0	253
Other offences	0	0	0	0	0	0	23	37	44	49	0	153
<b>Total</b>	<b>2,988</b>	<b>496</b>	<b>3,736</b>	<b>146</b>	<b>90</b>	<b>8,645</b>	<b>1,772</b>	<b>400</b>	<b>365</b>	<b>1,513</b>	<b>21</b>	<b>20,173</b>

Table S.3 gives the costs per offence. It shows that offences that are relatively serious are accompanied by high costs. The costs are the highest by far in the case of murder and manslaughter. A murder costs society more than € 3 million. Assault and battery cost about € 5,500 per offence, threats about € 2,700, sexual offences about € 2,600, property crimes about € 1,400 and vandalism and disturbance of public order about € 700. The costs of prevention are not included in these amounts, because it is unknown to what extent the costs of prevention are connected to the number of offences committed.

Table S.3 Costs of offences committed in 2005, per offence, in Euros

	Damage	Production loss	Medical costs	Harm	Detection and prevention	Persecution	Trial	Enforcement	Support	Total (round)
Murder and manslaughter	0	690,374	0	1.66 mln.	1,476	7,826	8,996	827,908	0	3,200,022
Sexual offences	0	0	0	1,781	49	61	69	605	9	2,574
Property crimes	454	0	0	634	180	20	20	104	1	1,413
Assault and battery	0	59	142	4,045	115	192	182	772	11	5,518
Threats	0	0	0	2,455	115	17	16	38	11	2,652
Vandalism, public order	274	0	0	278	101	15	10	55	0	733
Traffic offences	186	15	72	235	246	75	65	22	0	916
Economic offences	nvt	nvt	nvt	Nvt	71	315	145	18	nvt	549
Drugs offences	nvt	nvt	nvt	Nvt	58	93	77	437	nvt	665
Other offences	nvt	nvt	nvt	nvt	285	450	541	592	nvt	1,868

For most groups of offences, the costs determined by us compare reasonably well to those calculated by Dubourg and Hamed (2005) for the United Kingdom, although their estimates generally are somewhat higher. After conversion into Euros and adjustment for 2005 prices, Dubourg and Hamed estimate the costs of an act of vandalism at € 950 (€ 700 in our case), property crimes at € 1,900 (€ 1,400 in our case) and acts of violence at € 6,700 (€ 5,500 in our case). Some differences in costs can be explained. In the Netherlands, for instance, the average financial damage in the case of a property crime is lowered because of the relatively high number of bicycle thefts.

The costs of murder are considerably higher in our calculations. This is primarily because we estimate the costs of the judicial chain to be substantially higher than the English researchers do. A large difference occurs in the case of sexual offences: Dubourg and Hamed estimate the costs of sexual offences to be substantially higher than we do. According to their estimates, a sexual offence costs € 48,000. This is mainly caused by higher costs of using the health care system, higher costs of production loss and higher costs of harm. In the British crime victim surveys, the impact of sexual offences is greater than in the Dutch crime victim surveys. In the Dutch crime victim survey only 2% of the victims of a sexual offence indicated that the offence in question governed all of their actions, something that we refer to as post-traumatic stress disorder (PTSD). In the British crime victim surveys, 21% of the victims of sexual offences indicate that they suffer from moderate PTSD and 9% that they have severe PTSD.