

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

# POLICY DEPARTMENT **C**

## CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS



Constitutional Affairs

Justice, Freedom and Security

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# The Economic, Financial & Social Impacts of Organised Crime in the European Union

STUDY







**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT C: CITIZENS' RIGHTS AND**  
**CONSTITUTIONAL AFFAIRS**

**SPECIAL COMMITTEE ON ORGANISED CRIME,**  
**CORRUPTION AND MONEY LAUNDERING**

**The Economic, Financial & Social Impacts of**  
**Organised Crime in the EU**

**STUDY**

**Abstract**

The aim of the study is to generate a best estimate for the economic, financial and social costs of organised crime in and against the EU and to inform an evidence-based understanding of the associated issues. As so much uncertainty and known intra-EU and inter-crime variation exist, the study refrains from trying to create an aggregate figure for the costs of organised crime and responses to it in the EU as a whole and, instead, where possible, produces estimates for selected offenses. The study underlines that measuring the costs of organised crime is still at an early stage of development and that there is a clear need for more cross-border data matching and investigation in order to improve the quality of the evidence basis for European law enforcement agencies and their effectiveness in fighting organised crime.

This document was requested by the European Parliament's Special Committee on Organised Crime, Corruption and Money Laundering (CRIM).

## **AUTHORS**

Prof. Dr. Michael Levi, Prof. Dr. Martin Innes, Prof. Dr. Peter Reuter and Mr. Rajeev V. Gundur

## **RESPONSIBLE ADMINISTRATOR**

Andreas Hartmann  
Policy Department Citizens' Rights and Constitutional Affairs  
European Parliament  
B-1047 Brussels  
E-mail: [poldep-citizens@europarl.europa.eu](mailto:poldep-citizens@europarl.europa.eu)

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To contact the Policy Department or to subscribe to its monthly newsletter please write to:  
[poldep-citizens@europarl.europa.eu](mailto:poldep-citizens@europarl.europa.eu)

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## LIST OF ABBREVIATIONS

<b>CVit</b>	Cash and Valuables in Transit
<b>DDos</b>	Distributed Denial of Service Attack
<b>DIA</b>	Direzione Investigativa Antimafia
<b>DRM</b>	Digital Rights Management
<b>DSM-IV</b>	Diagnostic and Statistical Manual of Mental Disorders, 4 <sup>th</sup> Edition.
<b>EC</b>	European Community
<b>EMCDDA</b>	European Monitoring Centre for Drugs and Drug Addiction
<b>EP</b>	European Parliament
<b>EPPO</b>	European Public Prosecutor's Office
<b>EU</b>	European Union
<b>GDP</b>	Gross Domestic Product
<b>IP</b>	Intellectual Property
<b>ISO</b>	International Organization for Standardization
<b>ISP</b>	Internet Service Provider
<b>MS</b>	Member State
<b>MTIC</b>	Missing Trader Intra-Community
<b>NGO</b>	Non-governmental Organization
<b>OCG</b>	Organised Crime Groups
<b>OLAF</b>	European Anti-Fraud Office
<b>P2P</b>	Peer to Peer
<b>PDF</b>	Portable Document Format
<b>PPP</b>	Purchasing Power Parity
<b>PTSD</b>	Post-Traumatic Stress Disorder
<b>QALY</b>	Quality-adjusted life year

<b>SEPA</b>	Single European Payments Area
<b>SOCA</b>	Serious Organised Crime Agency
<b>SOCTA</b>	Serious and Organised Crime Threat Assessment
<b>THB</b>	Trafficking in Human Beings
<b>TRIPS</b>	Trade-Related Aspects of Intellectual Property Rights Agreement
<b>UNODC</b>	United Nations Office on Drugs and Crime
<b>VAT</b>	Value Added Tax

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## EXECUTIVE SUMMARY

### Background

There is consistent and widespread concern across the EU institutions and MS governments about the negative impacts that organised crime has upon the security of individual citizens, communities, businesses and MS. Set against this backdrop, this research was commissioned to engage in a synthesis of the research evidence base in an effort to produce a better estimate of the costs of organised crime across the EU.

In a number of areas, suitable data to prepare informed estimates of cost are lacking wholly, or in part, due to figures being produced via methodologies that render them unreliable. However, this does not mean that social harms cannot be identified, without producing imaginary numbers of a kind that too readily are done to gain attention to social problems. For example, there are the human costs of collapsed bridges, buildings and roads due to bad construction combined with corrupt construction contracts. The economic and social costs of these far exceed the profits made, to which we should add the social anxieties and the destruction of entrepreneurial drive that such criminal monopoly creates.

There are at least two ways of defining 'organised crime' for the purposes of this study. The first is to focus on Mafia-type associations – the image that most graphically captures what many people think of when they use the term. The second is a looser set of networks with far less stability or hierarchy whose participants supply markets with illicit goods and services: this represents the reality of 'organised crime' in most areas of most EU MS. The Mafia-type associations have activities in other MS, but we cannot easily identify a particular sets of costs attached to it, except in Italy and up to a point in Bulgaria. Therefore we have chosen to look primarily at the costs arising from the looser networked 'organised crime'.

The research has been conducted by a small team drawn from Cardiff University and the University of Maryland, comprising individuals who have long established subject matter expertise in relation to a variety of aspects of organised crime, and are actively engaged in conducting empirical research on the social impacts of crime.

### Aim

This study has three principal aims:

1. To produce a critical assessment of the state-of-the art in terms of what is and is not known about the prevalence and distribution of different forms of organised crime.
2. To set out a robust conceptual framework which would enable us to think more clearly and coherently about the costs of organised crime going forward.
3. To use this assessment and framework to interrogate empirical data on the costs of organised crime in the EU, where it is available and is judged to be reasonably valid and reliable, to produce informed estimates of what these social and economic costs might be.

Informed by published and other readily available data on different forms of organised criminal activity across the EU MS, the study outlines an innovative analytic framework that can present a systematic and structured picture of the various types of costs associated with organised crime. The analytic framework draws distinctions between:

- Predatory (crimes with specific victims) and market based organised crimes;
- Direct and indirect costs;
- Private, parochial and public costs;
- 'Upstream' and 'downstream' control/response costs.

This emergent framework builds up a picture of the different kinds of costs induced by organised crime, taking account of data availability and quality, enabling a way of progressively widening the scope of what is included in the count of costs. Unfortunately, there are so many gaps in the data available that this short scoping study was unable to fulfill our (and the European Parliament's) loftier ambitions and produce actual estimates for most offenses. However, the data and analysis presented makes a notable step forward and identifies some important gaps that must be filled if organised crime control policies are to take account of good evidence.

Both the costs these groups impose on society and the costs of policing them are difficult to disentangle without much fuller study. In measuring the costs of control, some institutions like the UK's SOCA (shortly, the National Crime Authority), the Italian DIA (Direzione Nazionale Antimafia) and Europol are dedicated to organised crime control. But others (such as OLAF, EMCDDA, Frontex) have a broader remit. In the final analysis, we decided that it would be too misleading to try to create an aggregate figure for the costs of organised crime and responses to it in the EU as a whole when so much uncertainty and known intra-EU and inter-crime variation exists. This would paper over the cracks of ignorance too successfully. Instead we keep some of these issues separate and, where sensible, we give a minimum figure of costs rather than the more conventional mid-point in a range which has a very large margin of error. We also include discussion of the dynamics of crime that one would not normally see in a study of crime costs. This is because 'organised crime' involves people with varied skills and resources which can change over time, whose interaction with crime opportunities and crime controllers in the public and private sectors produces 'the cost of organised crime' and – separately, via a different process – 'income of organised crime'. A figure for this outcome at one stage in time then risks becoming a 'fact by repetition' without understanding *how* this happens.

The case for transnational action against many types of organised crime is overwhelming, whether by prevention or, where this fails as it inevitably will, by criminal prosecution and administrative sanction. Clarity is important in deciding what purposes, beyond this, we want better aggregate evidence for. We need to balance the evidence and intelligence coordinated actions – the necessary prelude to effective prevention – and the criminal investigation functions in relation to how serious the separate and collective problems are and what can be done about them. There are never going to be sufficient resources to do all of those things, but cross-border cooperation in investigation and also in primary prevention against corruption and fraud minimise the criminal justice costs – both financial and in social credibility and legitimacy – that the EU and its MS have to pay. This report aims to make a contribution to that delicate balancing exercise by informing the political decisions that need to be made with a dispassionate review of the existing evidence on what organised crime does and what that costs us in the EU. We would prefer there to be more data that we could have analysed for this purpose: this is an early stage effort that we hope will inspire others to fill in the missing gaps. We have resisted the temptation to become post-modern alchemists, inventing estimations that are hard to falsify: for this would not contribute to rational decision-making by the European Parliament or its citizens.

## Methodology

The research itself involved a multi-lingual evidence search and appraisal exercise, in which we reviewed studies that made claims about costs of organised crime generally or particular activities, in the EU and in individual Member States. In engaging with the aims outlined above we have identified a number of cross-cutting problems with the current knowledge base that profoundly limit our ability to guide European Parliament decision-making with soundly based knowledge of what the costs of organised crime are. These gravitate around a number of core issues using the well known PESTLE framework, including

- Political – there are priorities that may be agreed across the EU, for example via the Serious and Organised Crime Threat Assessment (SOCTA) policy cycle. However the very different political contexts that exist across EU MS shape what other issues and problems are defined as priorities in practice by enforcement and other agencies and institutions that can have a preventative function. There are also different traditions of national and local data collection. Consistent data are seldom available across different problem types for many MS, making meaningful comparisons difficult.
- Economic – the economic situations of different EU MS shape their exposure to different organised crime risks. For example, some states have difficulties because they are points of origin for trafficked human beings, where others are points of destination. This makes it a mistake to extrapolate even from relatively robust data produced in one MS to estimate the problem across the whole of the EU.
- Legal – different legal regimens and traditions (including data matching in the private and the public sectors, and proceeds of crime seizure and confiscation regimes) alter the costs and possibilities of responding to organised crimes of different kinds, as well as the organisational inputs that are involved in effecting any such responses.

## KEY FINDINGS

There are many sorts of harms arising from crime, whether organised in Mafia-type Associations or not. The additional harms of 'organisation' consist of political and enforcement corruption, and the sub-standard, overpriced quality of construction and other services, along with threats to enterprise and an alternative structure of economic 'progression'. There is no credible basis for imputing economic costs to many aspects of these costs.

Minimum costs of organised crime in the EU

Our estimate of the minimum identifiable direct economic costs of selected activities of organised crime in the EU is as follows:

- Human trafficking - €30 billion
- Fraud against EU (cigarette smuggling) - €11.3 billion
- Fraud against EU (VAT/MTIC fraud) - €20 billion
- Fraud against EU (agricultural and structural funds) - €3 billion
- Fraud against EU individuals - €97 billion

- Unrecovered motor vehicle theft - €4.25 billion
- Payment card fraud - €1.16 billion
- Insurance fraud - €1 billion (in UK alone).

There do not appear to be any good studies of the impacts of illegal drugs themselves in the EU, though there is substantial literature on how much people spend on illicit drugs – a different question. There is far less violence in drug markets than is popularly thought: ‘highly organised crime’ helps to keep it in check, together with the desire not to attract policing attention. But we estimate at least 500 organised crime-related homicides, very unevenly distributed across the EU. For a number of other organised crime problems, no credible EU-wide data are available. These include extortion, intellectual property crimes, fraud against private businesses and national VAT fraud, all of which plausibly involve large costs and extensive harms, but data are lacking in too many MS. These are all discussed in the Main Report or in the Annexes.

#### Cost of responses to organised crime

It is important to look at the costs of responding to organised crime, but to keep that separate from the costs of crime themselves. The minimum response costs to organised crime at an EU level are €210 million (Europol/Eurojust/EMCDDA/Frontex only): this does not include national agency budgets. In the UK alone, for example, the 2013/14 budget for the Serious and Organised Crime Agency was €498 million, and this does not include main UK policing or prosecution costs. A substantial proportion of the Metropolitan Police Specialist Crime Directorate budget of €490 million in 2012-13 was spent on organised crime (€17 million was budgeted 2013/14 for reducing serious and organised crime by disrupting criminal networks; the budget for the Police eCrime Unit was €12 million). The Italian DIA’s budget has dropped markedly in recent years to around €10 million, but there are significant expenditures on organised crime by other Italian investigative bodies. In addition, there are many other costs, for example the very substantial ones incurred by the private sector in responding to money laundering and transnational bribery – as required by EU Directives and other legal obligations – and (in their self interest) frauds and conventional crimes against them. These have not been reliably counted across the EU or even in any individual MS, but they comfortably exceed the cost of EU-level anti-crime expenditures from the EU budget.

EMCDDA (2013) has estimated €34 billion as the cost of responding to illicit drugs in the EU. Some might consider that these are costs of illegal drugs themselves. But health expenditures are only partly a reflection of problem drug use itself, and treatment costs are determined by what governments are prepared to spend on drug treatment, not on its impact on users or society. (See Trautmann et al., 2013 for some detailed analysis.)

Economic and social costs of different kinds are only part of thinking about the broader social impacts of organised crime. Attending to cost directs our focus to fairly specific and material consequences of such activities, but there are other less tangible concerns. Moreover regrettable though this is, despite the harms caused, where state institutions have only a minimal footprint, the activities of some

organised crime groups also provide publicly valued protection and dispute settlement services that the state fails to do. If organised crime groups do occasionally act as a 'shadow state' then it would be mistaken to assess their social impacts purely in terms of costs. Nevertheless, in this study, we focus only on the negative consequences. In Mafia-type Association terms, the concentration of organised crime is severe in some pockets of the EU, such as Italy and Bulgaria – and might reasonably be viewed as a threat to the state there – but is not so intensively concentrated elsewhere in the EU, in many cases having primarily a local or at most regional effect. In looser networked terms, some activities of organised criminals do cause severe harm, and criminal capital is a source of criminal reinvestment and enhancing the capability to do further harm; but this occurs without the intertwining of criminality with politics that makes organised crime a threat in some MS.

## RECOMMENDATIONS

Based upon our expert assessment of the current state of our knowledge about the prevalence, distribution and impacts of organised crime across Europe, we conclude that a number of developmental steps are required to advance understanding in this area and consequently the efficacy of interventions. First, without more sophistication underpinning attempts to think about and measure the prevalence and distribution of various forms of organised crime cost, applied in a more consistent way across European States, it will be impossible to be confident in any estimates produced. It was beyond the scope of this small study to undertake such work, but one approach might be based upon profiling countries' risk exposure and situation, and using relatively reliable data collected in one country to derive estimates for countries with similar profiles. Such an approach would incrementally improve the quality of the evidence base for European agencies working in this area, to improve their effectiveness efforts at organised crime reduction.

Second, accompanying such a manoeuvre, we start to outline how, in thinking about costs and impacts, it can help to differentiate between:

- Private costs: which impact upon individuals directly connected to the victim;
- Parochial costs: that are born through community ties, for example extortion threats or Ponzi fraud against a particular business community or ethnic group;
- Public costs: are where the impacts are shared between citizens who are not directly connected to each other.

The principal advantage of introducing such an approach is that it steers attention in meaningful ways to those who are exposed to any such costs and could contribute data to fill in our understandings. For example, some forms of fraud tend to predominantly involve private costs – the victims are dispersed individual citizens of the EU. The main targets of other fraud types are small businesses, social enterprises

and individuals who are inter-connected, and so involve parochial costs. In addition, as intimated in the headline cost figures listed above, some frauds, against EU institutions for instance, involve public costs. We recommend that detailed attention be given in future to organised crimes against these sectors of society and economy, and how they evolve over time and place. This might be more fruitful in guiding enforcement and prevention interventions than using generic terms like 'the cost of organised crime'.

# 1. INTRODUCTION AND GENERAL BACKGROUND

## KEY FINDINGS

- We should distinguish between the harms **caused by activities themselves** and the **'criminal economies of scale'** offered by threat actors exploiting **existing** crime networks and opportunities for expansion via technologies and social networks
- **Routine activities of victims, potential crime preventers, and enforcement agencies interact with 'organised criminals' to determine levels of crime risk**, and this varies substantially within MS and within the EU as a whole
- The **social costs** of organised crime might be higher where a series of offences is committed against poor and relatively vulnerable victims, than when a much larger crime occurs against a business/government which has financial resilience
- The **crime and health care impact** of drugs depends on many factors including the **crimes committed/substances abused that would have happened anyway**
- **Costs of organised crime vary hugely** depending on whether we restrict our analysis to Mafia-type Associations or the very much looser UN Palermo definition

Our approach to the problem of measuring and estimating the costs of organised crime is predicated upon understanding such costs as a particular form of harm. Sutherland (1949) identified the quality of being 'socially harmful' as one of two necessary conditions for an act to be defined as a crime (the other being that it should be formally punishable in law). In so doing, the crucial distinction introduced when compared to more orthodox legal constructions of harm was his accent upon the 'social' component. More recently, the concept of harm has been re-tooled and repurposed by Malcolm Sparrow (2009) who understands it as integral to the effective management of risk; and by Paoli and Greenfield (forthcoming) and Greenfield and Paoli (2013). Thus, in organised crime, there are the harms of the acts themselves, plus the capabilities and intentions of 'conscious opponents' or 'threat actors' who find ways of working with each other that (i) are already there (e.g. Mafia-type associations in strong organisational forms; Deep Web/DarkMarket type markets in more open and less personal forms) and/or (ii) that they can create through networking.

Research into crime harms shows that the social and economic impact of a criminal act depends not just upon qualities intrinsic to the act itself, but also upon aspects related to the victim and victim resources. Thus, the costs of organised crime might be higher where a series of offences is committed against a collection of poor and relatively vulnerable victims, than when a single financially larger crime occurs against a large corporation which has financial resilience. (Though the unauthorised taking of technological IP from even a well-resourced corporation within the EU might cause severe damage to its future profits and employment and cause a huge opportunity cost.) Although the costs are distributed, the cumulative negative impact of wider attacks on less resilient people might be higher.

Developing this line of thinking, we might also think about 'the downstream' costs of organised crime. For example, a UK South Wales Police 'Operation Michigan' targeted serious organised criminals involved in drug dealing. A number of individuals were arrested and jailed as a result of police interventions, and monitoring of recorded crime

in the target areas showed a 25% reduction following the removal of these individuals. This suggests the potential for the presence of local/regional organised crime to act as a facilitator for other kinds of criminal activity - but the level of this is hard to gauge and measure.

This is important for research design in that it keys us into the ways in which the costs of organised crime also needs to consider the investments that are made in law enforcement agencies, situational crime prevention measures and other forms of intervention as part of attempts to anticipate, manage and suppress these forms of illegal activity.

The analysis attends to the impact of particular 'signal crimes' and how these channel governmental and civil society responses to organised crime risks and threats. Innes (2004) defines a signal crime as an event that changes how individuals, groups or institutions alter the ways that they think, feel or behave in respect of their security. Single incidents where the harm is clearly demarcated are easier to cost. By contrast, where the costs of an activity are distributed across a number of people and are relatively small for each of them, the reliability of any such figures is far harder to judge.

There is a general recognition that, especially for illicit trade offences and others which are consensual or where becoming a victim is not easily recognised, recorded crime or prosecution rates are more an index of police activity than they are measures of the 'objective' scope and scale of any crime problem. Signal crimes can channel institutional attention towards certain issues and events, and away from others. High profile crimes and incidents can increase levels of law enforcement attention, which in turn results in more of the problem being 'discovered'.

Costs of organised crime data in Europe *are* measures of the financial and welfare impacts upon European victims and on Europeans who are not direct victims. They are *not* measures of the benefits to European offenders from crime. Nor are they measures of the amounts of benefit from crime theoretically available for confiscation, which are conceptually distinct and pose different measurement problems.<sup>1</sup> In themselves, even if they were complete, the costs of organised crime are not adequate for determining investigative or prosecution resources to be allocated, because the efficacy or efficiency of different control measures on the losses needs to be factored in. At present, we do not know what impacts on crimes and their organisation many control measures make – alone or in combination – or whether the effects are similar in the different contexts across the EU in which criminals operate.

What we appreciate is that for policing against borderless crimes to be efficient, it needs more coordination and cooperation, and enforcement should not be deterred simply because the offenders and/or some or all of the victims are in a different EU jurisdiction. Increasingly this need arises not just for licit and illicit goods smuggling/trafficking markets – the final chains of which tend to be local or at most national – but for economic crimes. The data *can* be used as a rough baseline for some of the above issues; but it is very difficult to do much about *some* crimes that are high in cost/harm, and even if one adopts a precautionary principle approach, a judgment needs to be made about their efficiency and outcome effectiveness before investing in particular control measures.

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<sup>1</sup> Depending on the legislation on confiscation and reversal of the burden of proof post-conviction, this would be income and accumulated wealth from crime net of expenditure on 'lifestyle', and on 'business expenses', i.e. corruption, preparing and committing crimes, and on laundering the proceeds of crime.

There is a media and political market for very large numbers that this study seeks to step away from. In areas of human activity that are hard to falsify, claims of large harms and large benefits to criminals are easy to make as a way of attracting attention to an issue that otherwise would be neglected (Reuter, 1984). When claims of trillions of euros in illicit financial flows are made, then costs of billions or many millions of euros might seem trivial, so there is a tendency to inflate everything to improve its ratio relative to other problems about which there is pressure to act; this of course is not unique to crime. We have become used to a culture in which everything can be given an economic value, and things that can't are given zero value. This report seeks to make those judgments in a balanced way, but there will inevitably be differences in how European citizens and their governments value the avoidance of phenomena like 'sexual exploitation' - and indeed in whether we properly use that term to describe *all* contractual exchanges in sex work. (Though the risk of physical violence from clients as well as from 'managers' is always present in that area of work, whether buying and selling sex for money is legal or illegal.) There is a moral component of how we would like our societies to be - especially in open view - that influences what we prioritise as threats.

Losses from crime usually greatly exceed benefits to offenders. That is because of the economic, emotional and physical damage caused to victims (and to others in society) that does not correspond to financial gains to offenders. This is true of predatory crimes (like punishments for failing to pay extortion demands, or like interpersonal frauds, metal thefts from railways/ critical national infrastructure, or from places of religion such as churches), of cyber-attacks (for economic gain, ideology or malicious fun), of people trafficking (and terrorising some into doing sex work or other labour) and of toxic waste dumping. On the other hand, some crimes (e.g. most drug use, migrant smuggling, and purchases of counterfeit fashion and leisure products - but not of counterfeit pharmaceuticals) are voluntary and their harms are of a different nature, since whatever we may think of their (im)morality, in themselves they are more of a contractual arrangement. In other words, a service is obtained for a price. Thus there are benefits to customers, who may be witting or unwitting participants in crime (or, as they may see it, in increasing their own welfare by buying illicit commodities that give them pleasure). The harms here may be tangible - corruption, violence in the markets - and they may also be intangible - popular concern about unauthorised immigration or about youths 'enslaved' to drugs or to online pornography, whether or not the direct parties are consenting.

Drug markets present a particular conceptual challenge for our purposes. Although many drug-takers commit crimes, some of which may be to pay for drugs, we need to subtract from this the crimes that they may have committed anyway because of other characteristics or because of their circumstances. Some may have committed the same crimes to pay for legal alcohol or gambling or for better clothes or vehicles, for example. Some illegal drugs markets are much more violent than the majority are, and therefore levels of violence are only partly 'caused' by drugs (Naylor, 2009; Reuter, 2009). Some medical harms of illicit drugs are the result of their adulteration (often with toxic substances) and unknown (to consumers) purity levels (MacCoun and Reuter, 2001). Therefore calculating the size of drugs markets in the EU and knowing the prices of the drugs in the financial exchanges between sellers and buyers are important, but they are not a simple measure of the cost of illegal drugs. Even where illegal migrants (trafficked or smuggled) are exploited - a term that all too often lacks rigour and is applied only to illegal labour - calculating the harm requires us to set their conditions against what would have happened to them if they had stayed in their countries of origin. If women

are highly pressurised to subjection, and even forced to take part in unprotected sex, then the term exploitation is clearly justified; in other circumstances it is far more contentious.

It seems plausible to us that the effects of organised crime are greater when there is no one in legal authority to whom the victims believe they can turn and/or can actually turn for redress against criminal threats in their environment. In other words, crime concentration matters for local areas and regions just as it does for individuals (in repeat victimisation) and neighbourhoods. That is one (rational) reason why public concern about organised crime is particularly high in some EU member states and much less high in others. In our understandable concern about the effects of organised crime on the integrity of the State, we may neglect the more common (in Europe) impact of relatively small crime groups – which are connected globally via illicit commodities they sell – in quite local communities and cities. This brings us to consider the implications of the low threshold in the UN Palermo Convention/EU definition of organised crime. Because so much crime beyond the trivial and so many adult criminals can meet the criteria of three or more persons acting together for a period of time for financial gain, etc., there is a problem in separating out (1) Mafia-type organised crime – which most people would regard as dramatically oppressive to society and meriting special investigative measures and resources for the government – from (2) much lower level and looser ‘organised crime’, which most people might not regard as ‘organised crime’ at all, in the sense that it does not create neighbourhood let alone regional control by criminals and does not meaningfully subvert the democratic state.<sup>2</sup> Looked at from this perspective, and disregarding solo frauds (which individually range from small to multi-millions of euros), the second category of loosely networked ‘organised crime’ would be close to the sum of all crimes committed for economic gain in Europe, plus the costs imposed by criminals’ determination to control a geographic territory and a supply chain for illicit commodities, which is linked to economic gain but may not produce it directly. Assessments of the costs of organised crime depend clearly on whether we are adopting the concept that is closest to (a) the classical Italian model of Mafia-type association or (b) the networked model that is now mainstream in the way that academics, police and policy makers understand and combat ‘organised crime’ (Europol, 2013, Levi, 2012; Transcrime, 2013; World Economic Forum, 2012). Nobel Prize winner Thomas Schelling put it (1971: 74) as follows:

[B]urglars are never reported to be fighting each other in gangs for exclusive control over their hunting grounds. Burglars are busy about their burglary, not staking claims and fighting off other burglars. It is when a gang of burglars begins to police their territory against the invasion of other gangs of burglars, and makes interloping burglars join up and share their loot or get out of town, and collectively negotiates with the police not only for their own security but to enlist the police in the war against rival burglar gangs or nonjoining mavericks, that we should, I believe, begin to identify the burglary gang as *organized crime*.

That is conceptually attractive, and may capture what most European citizens may think of as ‘real’ organised crime that is clearly socially alarming: but it is difficult to apply to large datasets, and is more restrictive than the Europol (2013) construction of an organised crime group in the SOCTA and in national Organised Crime Threat

<sup>2</sup> Except in the trivial sense that all criminality shows the weakness of the state.

Assessments in Europe and elsewhere, for example in those from Australian Crime Commission, UNODC and US.

## 1.1 A short history of cost of crime measurement

The measurement of the costs of crime is in an early stage of development. The UK's Home Office examined the costs of domestic violence and even human trafficking borne by third parties such as the taxpayer and the private sector (e.g. insurers) as well as directly by the victim (Dubourg et al, 2005). These used standard health economics constructs such as QALYs to measure the impacts, also used in an interesting study by the Belgian national police (2011). However these largely involved unambiguous crimes with identifiable individual victims. A later study carried out for the Association of Chief Police Officers (Levi et al., 2007; Levi and Burrows, 2008; Levi, 2011) reviewed the costs of different forms of fraud to the UK, showing that – like an early Swedish study (AMOB, 1997) – they were considerably greater than that of ordinary 'predatory crimes' such as theft and robbery. Subsequently, the National Fraud Authority (2011, 2012, 2013) has produced a Fraud Indicator annually for the UK: such efforts have not been made in other EU MS.

A study of the costs of crime and criminal justice in Europe was conducted for the European Commission (<http://www.costsofcrime.org/>): though this examined a range of largely non-organised crimes, it was a useful baseline for us. There is also a published cost-benefit study of the European Public Prosecutor proposals, and as we write there are in train studies of the costs of corruption generally in the EU, and a more specific unfinalised study commissioned by OLAF on the costs of public sector corruption. So this is an area of active current interest.

Estimating the scale and impact of largely hidden illegal markets is challenging. It involves us knowing not just how much of different crimes there is and what the costs of those crimes are; but also whether or not the people committing those crimes are or should properly be labelled as 'organised criminals'. A first effort was made by Dubourg and Prichard (2008) as the background to a UK asset confiscation initiative, but it has not been refined or replicated across the EU, except up to a point in Belgium (Belgian National Police, 2011) and in classified reports in some other countries. The absence of robust data in many areas, and the overlap between market types mean that it is sensible to provide estimates for the individual strands of organised crime (counterfeiting, drugs, frauds on business, frauds on individuals, EU fraud, tax fraud, and so on), alongside broad judgments of robustness, rather than just a global figure for 'organised crime'. In some areas, such as drugs, data allow us to make an informed estimate of the total market size and key associated harms, at least for some MS. For areas such as human trafficking or counterfeit currency, where data are systematically weaker, our estimates are far more tentative. There are variations within EU countries not just in crime but also our knowledge of levels of criminality, of how they are organised, and of their economic and human consequences.

The complexity of how we should judge 'cost' is neatly illustrated by research on business crime in Wales and, in particular, a spate of organised metal thefts against large manufacturing corporations (Roberts and Innes, 2010). One business targeted lost all of their stock of precision machine engineered components, which posed a problem for police in terms of valuing the theft. Should the cost of the crime be the actual value of the metal stolen (c. €585), its market price, having been machine-engineered (c. €2 340), or the costs associated with the overall impact of the business who had to suspend

their entire manufacturing process (c. €2.34 million)? Through data collection conducted with a chain of supermarkets in Wales, a substantial amount of 'stock shrinkage' was identified. However, this was not defined as problematic by the managers of the stores because although the nominal value of the loss was high, it was within acceptable margins given their overall volume of sales, and there was no obvious way of reducing the crime losses without prejudicing other organizational goals. So in that sense it was costly and undesired but not very harmful.

Many assumptions have to be made, for example about the proportion of a particular criminal activity that is accounted for by organised criminals. Such assumptions are (or should be) intelligence led, based on critical analysis of how markets operate, including (but not simply reflecting) the knowledge of law enforcement partners and others who tackle organised crime on a day-to-day basis. Such estimates should be treated with caution and tested, where possible, against data (for example on price and volume of drugs, and on migration statistics and on the relationship between crimes and migration).<sup>3</sup> For some types of crime, we anticipated presenting *ranges* of cost, which are more faithful to reality than a single figure. In practice, however, data were so poor and intermittent that we have simply presented a minimum cost or no economic cost at all.

Finally, there is the issue of considering of whether investments in law enforcement and regulation that seek to 'manage' and 'suppress' organised crime and reduce its social and economic costs should be included in the costs of crime and if so, how. They are not costs intrinsic to crime itself but rather costs of the choices we make in responding to crime, whether our responses treat them mainly as crimes or mainly as health and associated social harms. Our approach is to include costs in anticipation of and in response to organised crime, but to keep them separate from the costs of crimes themselves. Otherwise, a feedback loop is created in which what we spend on today justifies itself forever as a cost of crime.

## 2. CRIME TYPES

### KEY FINDING

- It is helpful to distinguish between different forms of (i) predatory crimes against private, public and third sectors and (ii) market or illicit service crimes

Organised crime – a quite elastic term – encompasses many types of criminal activity. One way of classifying them is to distinguish between (i) predatory crimes against private, public and third (e.g. not for profit charity) sectors (like frauds – including alcohol/tobacco excise frauds – thefts, and robberies) and (ii) market or illicit service crimes (like drugs trafficking and people smuggling). Because of data availability issues, we do not deal in this report with all of these crime types: but it is important to remember their existence and social importance for economic and cultural life in Europe.

<sup>3</sup> Consider for example perhaps the most studied organized crime activity in the world, the US drug markets. Successive estimates of the scale of the markets for cocaine and heroin by the same research group using the same methodology have seen very substantial changes in estimates. See e.g. ONDCP (2000 and 2001).

**Table 1: A Preliminary Typology of Organised Crimes**

Organised crime types	Organised crime types excluded from the study <i>as types of crime</i> (though activities are included in the main categories of crime)
Acquisitive crime types Art and antiquities Cash and Valuables in Transit (CViT) Distraction burglary Metal theft Plant theft Road freight theft Vehicle crime for resale of cars/parts Counterfeit currency Environmental crime Extortion Frauds Against individuals, businesses and public sector in the EU MS; Against the financial interests of the EU Illegal Drugs Manufacturing and Distribution Organised immigration crime Abuse of legitimate entry Human trafficking People smuggling Intellectual Property violations Wildlife crime	Corruption Cyber crime <sup>4</sup> Identity 'theft' <sup>5</sup> Money laundering Violence

Some important crime types are excluded or treated only partially due to the difficulty in disentangling data and events from other organised crime types that they sometimes enable. Examples of these largely excluded crime types are identity theft, law enforcement and judicial corruption, and violent threats. Cybercrime has a high probability of extensive double counting, as well as the absence of sufficient quality data in some areas: but we will explore in Annex A what it means to be 'organised' in the context of cybercrimes, and what we know about their costs, while avoiding double-counting. Money laundering has been excluded on the grounds that though it is an important enabler, it is primarily a method of legitimising the revenues that organised criminals gain from other types of crime; it is a cost of criminal offences, a transfer from the original offender to the same or another offender via the provider of money laundering services. Any attempt to quantify the scale of money laundering would, therefore, involve double counting the proceeds of 'predicate crimes'. It would be legitimate to include and to quantify separately the laundering of the proceeds of organised crimes that were committed outside the EU, but there are no plausibly valid data on this. Furthermore, such data would add to criminal income in the EU, but do not generate EU victim costs in any meaningful sense of that term. All these excluded crime types are important organised crime issues in their own right and will continue to require

<sup>4</sup> Though we devote Annex A of this report to it as a category.

<sup>5</sup> We put 'theft' in inverted commas not because it is not serious but because when someone takes an identity, they usually duplicate rather than take it away entirely – therefore we prefer 'identity misuse' as a term.

further research as well as accountability to the European Parliament for strategic issues involved in combating them.

### 3. LITERATURE, DATA GATHERING AND METHODOLOGY

#### KEY FINDINGS

- Apart from the unclear boundaries of what different bodies and people mean by 'organised crime', there are few EU-wide studies of the costs of crimes committed by such groups, and they lie beyond business, household, and street victim surveys
- Variations in threat actor activities and vulnerabilities make generalisation from good individual MS studies unacceptable at present
- NGO and industry studies need to be treated with caution

#### 3.1 Literature search

To gather relevant literature and data, we mapped an array of search terms related to each component cost of organized crime, the 28 countries within the EU, potential EU entrants, the European Economic Community, and the EU itself. We linked these terms with Boolean operators to create targeted search strings. Using these strings, we searched a wide array of academic databases, commercial search engines, and non-traditional search engines, such as customised PDF searches. When Boolean operators were not permitted, we conducted simplified and batch searches. We carried out a comprehensive search in English. The English language search included data from 2000 onward. Methodological and theoretical papers were not excluded based on date of publication. We further undertook a targeted search in Spanish, Italian, and German. To retrieve usable data with the targeted search, we limited the years searched to 2009 onward. We also collected open-source publications and data sets from government offices and agencies (both EU and US), NGOs, think tanks, and research organizations in the search languages. Moreover, we systematically collected a range of material produced by accounting and consultancy firms (business crime/fraud/corruption/cybercrime/intellectual property theft surveys).

#### 3.2. The data and its limitations

The search yielded a limited, disparate quantity of useable data. As expected, academic papers came from several fields, including international relations, psychology, criminology, economics, law, and public health. Most of the academic output presented methodologies for counting specific phenomena. Data prior to 2007 was excluded. However studies between 2000 and 2007 that present the only available data have been noted. For the most part, the methodologies described within the academic literature have not been operationalized; nor have they been used for an initial sweep. Nonetheless, these methodologies were helpful in identifying the component parts of organised crime which need to be considered when estimating the comprehensive cost of organized crime to the EU.

Crimes that have high profiles or are/become politically salient, such as human trafficking, unauthorized immigration, or illicit drugs, have reports prepared by NGOs that focus on these topics. Crimes in which corporations identify themselves as victims in some capacity, such as IP theft or cigarette counterfeiting/smuggling, also have publicly available reports undertaken by the companies affected. Reports from both

these sources often contain insider insights but they must be scrutinized carefully since they may overstate or inaccurately describe problems in an attempt to garner political currency for their cause. They may present estimations based upon incomplete, obsolete, or unsubstantiated data, or their operational definitions may be biased, not always consciously.

Few data sets include every EU MS.<sup>6</sup> Typically, data are available only for select EU countries or for specific regions within EU countries. Some studies include the EU within a broader scope. Such meta-studies do not always provide the breakdown necessary for us to extract relevant data. Most EU member states do not share a common tradition of tabulating and counting as, for example, the US states do.<sup>7</sup> Furthermore, the lack of country specific data may be the result of any of the following:

- Lack of harmonisation in how organized crime acts are defined and counted;
- Different research agendas within the member states;
- A lack of funding to repeat, update, and expand older studies;
- A lack of corresponding agencies in other MS tasked with such research – whether operational or analytical (e.g. The UK's National Fraud Authority, Sweden's Economic Crime Bureau, or Catalonia's Oficina Antifrau); and,
- Some important and relevant reports are unavailable in English, German, or French due to such reports' domestic scope or their internal/non-public release.<sup>8</sup>

For reasons of space, we outline the methodological background in Annex B. Poor data availability renders accurate estimation impossible. Moreover, extrapolated data would not account for variances in costs across the EU due to fluctuations in the exchange rate of the currencies used within the EU over the time that the different surveys were conducted and variances of purchasing power parity (PPP) within the Euro zone over time and at any given time. In other words, the monetary cost of a given incident is likely to vary due to when and where it occurs. With no average monetary cost available, the confidence in any extrapolated number must be restrained. Only costs borne or paid for directly by the EU (like those within OLAF's competence) are immune to such variance. Consequently, to provide a more precise number, if the data were available, national estimations of each component cost identified in any given section should be summed.

## 4. HOMICIDE AND ORGANISED CRIME

### KEY FINDINGS

- Violence in drug and other organised crime markets is more restrained than the popular image would suggest.
- Taking the England & Wales figure of 6% of homicides being linked to organised crime as an average rate for Europe, and using EU homicide data for 2010, this would imply some 500 organised crime related homicides annually in the EU.

<sup>6</sup> More complete data sets are limited to data on drug-related public expenditure.

<sup>7</sup> A notable exception is the UK.

<sup>8</sup> This is not a critique of the subsidiarity principle or of countries using their own language for their own governments or public – just a comment on how it affects this modestly funded review of the evidence.

Because such violence is unevenly distributed, the rates in some jurisdictions are significantly higher (and in others, lower).

One reason that so much effort is put into countering organised crime groups stems from a concern that their activities will either directly or indirectly be associated with serious violence. As with other forms of organised criminal activity however, there are real problems in terms of establishing reasonable estimates of the prevalence of such activity.

The issues are encapsulated neatly in Roberts' (2010) ethnographic study of violent gun crime in Brixton. By targeting other drug dealers, the attackers were almost guaranteed to gain either quantities of drugs that could be sold on, or significant amounts of cash. Moreover, 'the victim' of the crime could not report what had happened to the police. Little of this predatory violence featured in police recorded crime statistics. Nevertheless, we stress that such violence (including homicide) remains quite rare. Homicide in general, and unsolved homicides in particular, can provide a useful alternative indicator for gauging the prevalence and distribution of serious non-family violent crime. There are certainly suggestions that despite the generally restrained number of gang-related killings (not least to reduce costs of managing responses from other criminals and police), in some parts of the world and even in parts of Southern Europe, Organised Crime Groups (OCGs) are responsible for producing a significant proportion of *cadaveri eccellenti* as well as (far more commonly) of less elite non-domestic homicides. In pure economic terms, the latter are costed quite modestly, since their loss of legitimate economic productivity is low.

Using criminal homicides as a marker of levels of OCG activity necessarily involves a second-order problem of attribution. That is, what proportion of criminal homicides are 'caused' by OCGs? In Southern Italy, this might be commonplace. But to investigate this issue in the UK, the Home Office commissioned a study to conduct an exploratory analysis in relation to this question. The study concluded that about 6% of criminal homicides in England and Wales 2005-6 had some form of link to organised crime (Hopkins et al., 2011). Of the 696 cases reviewed, 54 cases were likely linked to the activities of organised criminal groups, and of these, 17 were directly caused by groups with a distinct organisational structure. Those cases with such links were far more likely to remain 'undetected' by police, when compared with homicides overall. The costs involved in the police investigation will be much higher than they will be for the average homicide. Such crimes also had greater social impacts in that they were more likely to be committed using firearms and to occur 'in the street'. In translating these issues into thoughts about cost, such incidents and costs associated with them are not equally distributed. For example, analysing data from London, Roberts and Innes (2009) identify that the vast majority of gun related homicides in London occurred in 5 boroughs in the city, and this provides a rough indicator of links to OCGs. The burden of responding to such crimes tends to fall locally, and their impact as greatest locally.

The aggregate level of criminal homicide has declined significantly in recent years across most European countries. This raises further interesting questions about whether such declines mean that serious organised crime violence has been declining too, at least in terms of the production of fatalities, or whether this is proving more resistant to reduction, and hence is forming a greater proportion of those cases that do happen.

The 2011 Global Study on Homicide (UNODC, 2012) gives some relevant data, which we have refined to include only the EU and some of its near neighbours. However, note that where legal and/or illegal firearms are readily available, some domestic homicides use them, so these figures are not all 'organised crime' cases. This project has not had the substantial resources needed to break down the data further. Among the EU MS, Italy, Belgium and Bulgaria top the per capita homicides by firearm. The data on absolute numbers are misleading because they do not take country population size into account, though Italy is top on both criteria. Turkey and Switzerland have higher per capita rates than Italy, but Swiss deaths are seldom related to organised crime. Taking the figure of 6% of homicides being linked to organised crime as an average rate for Europe, and using EU homicide data for 2010, this would imply some 500 organised crime related homicides in the EU. Because such violence is unevenly distributed, the rates in some jurisdictions are significantly higher (and in others, lower), and this is a conservative estimate in the light of the data in Table 2.

**Table 2: Firearm-related Homicides in the EU and some Neighbouring Countries**

Country/ Territory	ISO code	% of homicides by firearm	Number of homicides by firearm	Homicide by firearm rate per 100,000 people	Global Rank by rate of ownership	Average firearms per 100 people	Average total all civilian firearms
Austria	AT	29.5	18	0.22	14	30.4	2500000
Belgium	BE	39.5	70	0.68	34	17.2	1800000
Bulgaria	BG	29.7	51	0.67	88	6.2	480000
Croatia	HR	34.7	17	0.39	26	21.7	950000
Cyprus	CY	26.3	5	0.46	6	36.4	275000
Czech Republic	CZ	11	20	0.19	38	16.3	1600000
Denmark	DK	31.9	15	0.27	54	12	650000
England and Wales	1	6.6	41	0.07	88	6.2	3400000
Estonia	EE	3.9	3	0.24	65	9.2	123000
Finland	FI	19.8	24	0.45	4	45.3	2400000
France	FR	9.6	35	0.06	12	31.2	19000000
Germany	DE	26.3	158	0.19	15	30.3	25000000
Greece	GR	34.9	29	0.26	23	22.5	2500000
Hungary	HU	5	7	0.07	93	5.5	560000
Ireland	IE	42	21	0.48	70	8.6	360000
Italy	IT	66.7	417	0.71	55	11.9	7000000
Latvia	LV	4.6	5	0.22	32	19	280000
Lithuania	LT	2.5	6	0.18	160	0.7	135000
Luxembourg	LU	42.9	3	0.62	41	15.3	70000
Malta	MT	0	0	0	55	11.9	48000
Netherlands	NL	30.7	55	0.33	112	3.9	510000
Northern Ireland	2	4.5	5	0.28	25	21.9	380000
Poland	PL	7.1	35	0.09	142	1.3	510000

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Portugal	PT	33.8	44	0.41	72	8.5	900000
Romania	RO	1.3	5	0.02	160	0.7	160000
Scotland	3				93	5.5	280000
Slovakia	SK	11.2	10	0.18	73	8.3	450000
Slovenia	SI	15.4	2	0.1	47	13.5	270000
Spain	ES	21.8	90	0.2	61	10.4	4500000
Sweden	SE	33.9	37	0.41	10	31.6	2800000
Switzerland	CH	72.2	57	0.77	3	45.7	3400000
Turkey	TR	16.9	535	0.77	52	12.5	9000000

## 5. TRAFFICKING IN HUMAN BEINGS

### KEY FINDINGS

- There is little agreement about how many people are trafficked into the EU and for what services (sex or other labour) or with what levels of compulsion
- Eurostat has recorded 5 535 THB victims in the EU in 2010. Adding 'presumed' victims, the total trafficked was 9 528
- Using medical and other cost data assuming high harm, the total damage to those victims is estimated at €30 bn in EU

As the European Union has recognised in its policy statements, Trafficking in Human Beings (THB) is one of the more emotive areas of organised crime, referred to as 'modern slavery', etc.. It is normally conceived of as having two components: trafficking for sex, and trafficking for labour. Some might argue that paid-for sex is only a special type of labour and therefore it should be a sub-category. But we will not pursue that controversy here. In common with other areas, we might differentiate the techniques and organisation of trafficking for things that have been criminalised (paying for sex is *per se* criminal in only a few EU MS) from those that are legal but have a component of illegality in them, such as labour in legal industries, or exploitation of legal sex workers by physical threats/injury/ requiring them to have unprotected sex. However whether that distinction affects the harms of those activities is more complex. As with many criminalised phenomena, there are cultural debates about what the limits of migration should be, both in general and for particular categories such as asylum seekers; and whatever its origins, many Europeans associated illegal migration with fear and with organised crime (which sometimes is a proxy reason for European fears about change and worsening standards of living). Whatever the law, there is a demand for workers from outside the EU and there is heavy profit extraction from exploited workers (which may not always be profit maximising, and which may be driven also by pleasure from controlling other people).

Eurostat (2013: 41) helpfully provides data on different contexts of HT over time, from 16 countries who kept data 2008-10. Such data *appear* to show a rising proportion of sex trafficking but are largely the product of what the police focus upon (driven by what is visible, by public pressures and by their intelligence sources). In some studies, all sex work is trafficking; for others, the sexual exploitation must be more like physical threats and violence, perhaps backed up by threats to relatives. A useful discussion of data on human trafficking is Aronowitz (2009).

Kopp (2012: 179) notes:

The estimates...fluctuate between two extremes....only the number of people known to have been harmed....At the other extreme, the estimates include all illegal migrants, thereby failing to discount for those who have not been trafficked in any sense...adding flows together that have nothing in common other than the units in which they are expressed does not produce meaningful values. One of the reasons many of the available data are too flawed to be useful is that they are often produced with an eye to isolating human trafficking from the illegal activities the trafficking facilitates....its economic *raison d'être* is to supply a workforce for criminal or illegal activities. In this sense, human trafficking is a means and not an end; it is one step in a complex economic subsystem. If a political agenda drives

the desire to separate out this element, it is almost impossible to develop good data.

Most studies look at costs from the point of view of how much different aspects of the business cost to do - e.g. transportation, false documentation, bribery - rather than what the impact is on victims or on 'society' (cf. Belser, 2005; Kopp, 2012; Marsh et al., 2012; Wheaton et al., 2010. See also the special issue edited by Kleemans, 2011). In recent times, there have been some public health reviews which have looked at the impact on victims themselves in greater detail, without looking at the wider implications. It may help to differentiate contexts. In some settings, the individual who controls and directs the 'trafficked' person's labour/services also consumes it (e.g. the husband of a 'trafficked' bride, the employer of a trafficked domestic worker). In others, 'trafficked' labour is organised and controlled by brokers who do not consume the service (e.g. the garment or the sex industry). In the case of begging and petty crime, the 'trafficked' person's labour does not generate a product or service to be consumed, merely income for the individual who exploits her/him; and in the case of those trafficked for purposes of organ removal, the exploiter treats the body as an object to be discarded once the end product has been extracted. As O'Connell Davidson (2006) concludes, there is 'no specific demand for the labour/services of trafficked people, and if States are to respond to demand factors in trafficking, they can only do so by addressing the more general demand for cheap and unprotected labour and services.'

In addition to those recognised in Annex C, the methodological difficulties are analogous in some respects to deriving impacts of domestic violence from studies of women in Refuges. Only the more extreme cases typically come to light and those people who, though exploited, send remittances home while being unhappy workers are usually discovered only by accident. If all trafficked (and, a fortiori, illicitly migrating) workers were totally exploited, it is not likely that their families would invest what to them are huge sums in sending them to the EU or elsewhere, since they would not see models in their community where this had produced benefits. On the other hand, some poor families would still sell their children into indentured labour, and some would still be kidnapped. The difficult issue is assessing the proportions of each, and the data are not good enough for this purpose.

No economic costs were discussed in any of these studies cited above or in Annex C. However, one could apply to trafficked women (if not to trafficked labour, and certainly not to voluntary smuggled labour or sex work) the costs model developed by the Home Office (Dubourg and Prichard 2008), which assumes a level of violence analogous to that of severely battered women in domestic violence. They estimated that the costs of physical violence from traffickers averaged €218,684; costs of physical violence from clients - € 71,486; and Quality of life costs - € 16,892. They noted (p.14) that:

The total economic and social costs of people trafficking for sexual exploitation in the UK is estimated to be up to £1bn in 2003. This is estimated by attempting to quantify the amount of physical and sexual abuse of trafficked women; this is then monetised using Home Office research. In addition to this, the researchers estimate the deterioration in quality of life suffered by those being trafficked and monetise this as well. *The resulting valuation is subject to very high margins of error.* [Italics not in the original.]

Translating the historical costs to Euros *without* adjusting for present values or for differential medical and other costs across the EU or for far lower costs in countries of origin, this would equate to €307,062 per trafficked woman for sex. Based on information from 24 Member States, Eurostat (2013: 31) note that the total number of

identified victims in the EU in the year 2010 is 5 535. Adding this to their other category of 'presumed' victims, the total trafficked was 9 528. Since Dubourg and Prichard assumed that the number of trafficked women in the UK alone doing sex work a decade ago was 3800, the Eurostat figure would be a lower number pro rata, but it uses a different methodology, and UK numbers may have been significantly over-estimated (Davies 2009a, 2009b).<sup>9</sup> Eurostat data specify 139 UK victims, of whom 95 were for sexual exploitation: but a later UK estimate (on unknown methodology) was that 2 255 potential victims of human trafficking were encountered in 2012 (SOCA 2013). A round figure estimate of the THB costs based on Eurostat identified and presumed trafficked data would be €30 billion for the EU. This is consistent with the Belgian National Police (2011) analysis of organized crime which states (p.22) that a tenth of prostitutes are beaten regularly, and the damage to them is estimated at 1.9 billion euros a year.

Other estimates of trafficking levels are much larger and, if correct, the costs figure would be much higher. However despite the appalling images in the distressing real cases often featured in NGO work, documentaries and prosecutions, the average level of violence in human trafficking (and *a fortiori* in human smuggling) is much disputed. Kopp (2012: 190-191) compellingly summarized the logic as follows:

Violence directed at migrants is not a necessary part of the illicit market. It is attenuated by the social networks, cultural norms, and contractual relationships in which the market is embedded....Criminal organizations seem much less violent in human trafficking than in the drug market. Perhaps the reason is the absence of territoriality. The final distribution of drugs requires the control of a territory in a way that is not required in human trafficking. Furthermore, the fact that drugs concentrate great value in a small volume creates a singular opportunity because it is possible to steal the stock of drugs from a dealer. It is impossible or, at least, more difficult to steal a stock of organs or clandestine immigrants. Violence is therefore fairly rare among the criminal organizations involved in human trafficking. We may thus legitimately consider that the costs are mainly reduced to the costs associated with logistics and corruption.

If this were to be accepted, the level of harm per *average* trafficked victim would be much lower than in the Dubourg and Prichard (2008) study. There would still be a significant (and socially unacceptable) number of high harm cases, but the total cost would be lower than is commonly supposed.

## 5.1. Costs in response to THB

In 2010, there were 1 603 traffickers prosecuted and 1 339 convicted in the EU 27 and what were then candidate countries. There are no data that would enable us to calculate the average costs of prosecutions, but convictions were predominantly in France, Romania, Germany, and Bulgaria, which were the only states that had more than 100 convictions. Additionally, there are police units, NGOs, and medical services in destination and origin countries which deal only with those identified. In 2012, the direct cost of the UK Human Trafficking Centre (excluding operational assistance from other policing units) – part of the Serious Organised Crime Agency – was €154 million.

<sup>9</sup> Davies N (2009a) 'Inquiry fails to find single trafficker who forced anybody into prostitution' <http://www.theguardian.com/uk/2009/oct/20/government-trafficking-enquiry-fails>; and Davies N (2009b) 'Prostitution and trafficking – the anatomy of a moral panic' <http://www.theguardian.com/uk/2009/oct/20/trafficking-numbers-women-exaggerated>.

The Home Office spends about €2.34 million annually on victim assistance. Other data are not readily available in English.

## 6. ILLEGAL DRUGS MANUFACTURE AND DISTRIBUTION

### KEY FINDINGS

- The problem of estimated scale is not just lack of data on consumption by the frequent users but also the rarity of data on purity adjusted prices.
- Estimates of EU cannabis expenditures are €7-10 bn annually, not all of which goes to 'organised crime'
- EMCDDA estimates EU drug intervention costs at €34 billion, with high error margin

### 6.1. Scope

What share of drug-related harms should be attributed to organised crime is a matter of argument. One possible position is that all illicit drug consumption is ultimately facilitated by organised crime from the local to the transnational level. One might therefore include all harm resulting from illegal drug use itself<sup>10</sup> in estimates of the costs of organised crime. However, we consider that perspective to be a mistake because some of those costs are at least in part the result of the way we deal with offences and offenders, and because few user/dealers – the majority at the retail end of the market – could plausibly meet even the Palermo definition of organised crime, let alone the Mafia-type Association criteria (MacCoun and Reuter, 2001). Whereas the upper levels of distribution (export, smuggling, high level wholesale) involve complex organizations, and perhaps even large ones, much of the low end of the trade consists of individual sellers working on their own behalf.

Health costs resulting from overdoses or treatment programmes might also not be attributed to the supply side of the market. If the counterfactual is that the supply of illegal drugs were to be eliminated, many of those currently abusing cocaine, heroin etc. are likely to abuse other substances, including alcohol. There would probably be a reduction in health costs but certainly not equivalent to the elimination of those currently caused by illegal drugs. Costs arising from acquisitive crimes committed to fund addiction (in addition to drug offences such as possession) and all public spend directly aimed at tackling illegal drug supply and demand in the EU are considered within the scope of this report.

### 6.2. Scale

If more data were available for other countries, the estimate of the scale of the illicit drugs market might use the UK approach adopted by Pudney (2006) as a starting point. Recent efforts to develop estimates for the EU as a whole have been frustrated by the dearth of data sets, particularly on the small share of users who account for the majority of consumption of more addictive drugs such as cocaine and heroin: see Report 3 in Trautmann, Kilmer and Turnbull (2013). The problem is not just lack of data on

<sup>10</sup> The use of some illegal drug types will be considered within the scope of this report: cannabis, amphetamines, cocaine (not broken down into crack and powder) and heroin. To include other drugs would be over-ambitious, given the state of our knowledge.

consumption by the frequent users but also the rarity of data on purity adjusted prices. The European Monitoring Centre on Drugs and Drug Abuse has encouraged the development of price data for major drugs in MS but without associated purity observations, which can be found in almost no EU countries, it is impossible to match price data to quantities in a meaningful way.

### **6.3. Costs**

The social and economic costs of illicit drugs includes the drug-related costs of acquisitive crime, drug deaths, health costs, drug treatment, and the cost of enforcing drugs offences (such as possession, production and supply). Drug-related health costs include hospital admissions, neonatal care, and the cost of treating drug-related HIV. These costs need to be treated carefully as they are not all truly 'costs of organised crime'. Additionally, there are environmental costs from drug production such as EU-produced commercial 'home grows' of cannabis (e.g. by Vietnamese illegal immigrants who may be smuggled or sometimes trafficked) and synthetics such as methamphetamine. Estimates of the EU cannabis market suggest a range of approximately €7 billion to €10 billion annually, not all of which goes to 'organised crime' (Trautmann, Kilmer and Turnbull, 2013).

The EMCDDA (2008) uses a table of labelled costs to illustrate data on the dedicated part of expenditure in the EU in 2005. The estimates for many countries are obviously no reflection of the true total; 4 million Euros for Austria is perhaps just the cost of operating the drug co-ordinator's office. This is understandable because it is difficult to separate out costs except where one has dedicated counter-drugs units, which are in decline in policing (EMCDDA, 2013), though it is not so difficult to measure drug treatment costs. The UK has made a more conscientious effort to capture the relevant expenditures. Home Office analysis costed drugs expenditures at €1.3 billion for 2006/2007, which includes Ministry of Justice expenditure on drugs including prisons, probation and court service costs) but excludes all police costs (including direct costs of dealing with supply and possession).

Vander Laenen et al (2011) noted that in 2008, Belgian public authorities spent approximately 975 million Euros on drug policy (for illegal drug, alcohol, psychoactive medication and tobacco), of which a fifth was on policing and more than two thirds on treatment. In the illegal drugs area – the most relevant for our purposes – 61 per cent of the budget was spent on enforcement in 2008: 243 million Euros. Reitox (2008) notes that in 2007 the Dutch government spent about 716 million euro on combating drugs crime and prosecuting suspects on Opium Act charges. Also, 165.8 million euros were spent on treating drug addiction. No similar data are readily available elsewhere in the EU.

The best data on the cost of responses to drugs are for policing. The number of law enforcement officers specialising in work with illicit drugs was estimated for 23 countries, amounting to a minimum of 17 000 specialised officers, mostly from police forces. Although the numbers reported are probably not all comparable, specialised officers can be estimated to represent between 0.2% and 3.3% of all law enforcement officers at national level (EMCDDA, 2013). In the Netherlands, for example, 75 % of expenditure on drugs was on enforcement, despite that country's reputation for liberal attitudes.

Reuter (2006) distinguishes between Prevention, Treatment, Enforcement, and Harm Reduction Programmes. Of these, the Enforcement one is the primary candidate for

organized crime expenditures, but the others might also reasonably be included as different ways of reducing harms partly generated by organized crime involvement. Overall, 11 countries (Belgium, Czech Republic, France, Luxembourg, Hungary, Netherlands, Poland, Slovakia, Finland, Sweden, United Kingdom) accounted for a total amount of drug-related expenditure of EUR 15.4 billion in 2005, which is then extrapolated to a best estimate of €34 billion for the EU as a whole, but with a high margin of error (EMCDDA, 2008). Prisons (31 %) and police services (16 %) covered the majority of *labelled* expenditure on public order and safety (about a fifth of total drug control expenditure – which appears to us to be on the low side for illegal drugs), while law courts accounted for only 0.06 %. These relative and absolute expenditures are reflections of what we choose to do about drug offenders. Since those identified as organised crime offenders are typically given longer sentences, they cost more. The health costs and deaths are a problematic area to attribute to organised crime. It might be thought that the more 'organised' the market, the fewer the killings, because there is even less incentive for criminals to injure their customers and disable them from future consumption. Many of the deaths are inter-criminal disputes and in some few circumstances, the absence of such injuries and homicides may signal *lack* of effective competition over supplies.

**Table 3: Total Public Expenditure on Illegal Drugs in the EU by Country**

	Amount (EUR million)	Amount as a proportion of total public expenditure (%) (%)
Ireland	176.8	0.32
Malta	4.9	0.23
United Kingdom	1 463.8	0.18
Denmark	119.1	0.11
Poland	107.0	0.10
Portugal	69.1	0.10
Luxembourg	9.8	0.08
Greece	53.4	0.06
Slovenia	7.5	0.06
Estonia	1.9	0.05
Cyprus	3.2	0.05
Lithuania	3.5	0.05
Romania	13.5	0.04
Czech Republic	16.9	0.04
France	315.4	0.03
Slovakia	1.9	0.01
Finland	8.0	0.01
Germany	35.5 (%)	0.003
Austria	4.0 (%)	0.003
Hungary	1.0	0.002
Croatia	7.2	n.a.

It is estimated that at least 1.2 million people received treatment for illicit drug use in Europe during 2011 (EMCDDA, 2013). Opioid users represent the largest group undergoing treatment, while data on treatment entrants suggest that cannabis and cocaine users are likely to be the second and third largest groups, although with differences observable between countries. Health-related harms are precipitated by fluctuating strength and impurities, and by the context of use, as well as by the intrinsic properties of the substance and how intensively it is used. Therefore attribution to 'organised crime' is often a tautology or simplistic, except where there is something about the drug market itself that generates the harms beyond what would happen if people purchased their drugs from 'unorganised' or 'disorganised' suppliers.

Greenfield and Paoli (2013) argue that harms in relation to the importation of drugs include:

- harms to the physical and psychological integrity of individuals either from cocaine trafficking via the air route, such as when body-packers overdose, or from the use or threat of violence along any route; in the latter case, traffickers,

couriers, other facilitators and, more rarely, government officials or representatives might be victimized;

- harms to the operational integrity, reputation and 'privacy' of government entities might arise if officials or representatives (e.g. law-enforcement or customs officers) engage in corrupt practices;
- harms to the operational integrity, reputation and 'privacy' of transport and import-sector businesses might arise if corrupt officials, employees or traffickers misuse the assets of those businesses; reputational damage does not require internal collaboration; moreover, it can occur even if a business initially lacks any knowledge of misuse;
- harms to the material interests of individuals, government entities or businesses might occur independently or arise in conjunction with harms to physical, psychological or operational integrity if the latter involve or require either medical treatment or the repair or replacement of material goods.

Thus far, putting numbers to some of these impacts has been elusive, but this is a good conceptual foundation.

## 7. COSTS OF FRAUDS AGAINST THE EU (INCLUDING ORGANISED CRIME FRAUD)

### KEY FINDINGS

- Fraud costs change over time depending on defensive measures and criminal skills
- Fraud against EU (Cigarette excise fraud via smuggling) - €11.3 billion
- Fraud against EU (VAT/MTIC fraud) - €20 billion
- Fraud against EU (agricultural and structural funds) - €3 billion
- OLAF spends €78.1 million countering fraud, but only some on 'organised fraud'
- With an average of under 10 cases per country per year, and not particularly long average sentences, criminal justice response costs to EU frauds are quite modest.

There are two components of this issue, which are linked but separable. The first is the cost of frauds directly aimed at the EU's financial interests, i.e. at the substantial funds disbursed by the EU. The second is the cost of frauds against MS individually, which still affect the EU but to a very much lesser extent, because MS pay 3 percent of their receipts from VAT to the EC's 'own resource' budget. This report is not about issues of subsidiarity within EU policy, but a situational crime prevention model of tax fraud would clearly see both national and EU-level actions as constituting 'capable guardianship' in the motivation-situational opportunities-capable guardians 'crime triangle'. This model is implicit in the decision of the European Council<sup>11</sup> to adopt Directives enabling immediate measures to be taken in cases of sudden and massive VAT fraud ("quick reaction mechanism"); and to allow MS to apply, on an optional and temporary basis, a reversal of liability for the payment of VAT ("reverse charge mechanism"), with the aim of closing off carousel schemes which generate massive refunds and leave one fictive trader owing

<sup>11</sup> 12627/13.

vast VAT debts. Moreover, since this report generally is about organised crime against MS as well as against the EU itself, both perspectives are compatible with inclusion.

Understandably, OLAF reports do not distinguish fraud from 'organised crime fraud' but in some places, they distinguish 'complex' from other frauds, and the definition of complexity is similar to that of the EU/UN TOC. It is proposed to take OLAF's 2 per cent of cases being 'complex' and 58 percent 'moderately complex'<sup>12</sup> as a *minimum* level of organised crime, since forensic network analysis of insurance and credit frauds shows that very many frauds that *prima facie* are isolated are in fact connected. Data suffer from the familiar problem of resting upon forensic analysis before they become 'official figures'. Indeed, there is a huge disparity between data recorded as fraud by OLAF and even modest estimates of 'true fraud' against the EU, which leads to disputes about the efficiency and effectiveness of OLAF, and also the extent to which this is affected by the inhibitions placed upon it by the MS collectively because of unwillingness to pool data and set up systematic processes to enhance knowledge of frauds, whether exclusively or merely partially against the interests of the EU. The House of Lords EU Committee (2013) argued that the Commission's estimate of the volume of fraud against the EU budget (€404m)<sup>13</sup> is "only a glimpse" of the real level, which it estimated at around €5 billion, including €1bn in losses linked to VAT fraud.<sup>14</sup>

The valuable Impact Assessment for the EPPO states:<sup>15</sup>

On the revenue side, VAT fraud and cigarette smuggling have been estimated to each cost the EU budget some €1 billion per year. As regards spending, the preparatory study for this impact assessment estimates that in a "low-risk" scenario, damages in the area of agricultural and structural funds could amount to €4.1 billion each year....It has been assumed that about €3 billion per year could be at risk from fraud...The true figure, however, cannot be calculated precisely.

We broadly concur with that judgement. It is an illusion to think that we can definitively resolve the overlap between fraud and irregularities, though it is disturbing that 6 MS reported that they suffered no fraud at all on the Cohesion Programme.<sup>16</sup> A recent study of procurement fraud/corruption<sup>17</sup> demonstrates the variation in direct costs in a sample of countries and sectors.<sup>18</sup> However we might consider how we should think of the sums – as absolute figures and/or as percentages of funds at risk? Imagine if we looked at thefts, burglaries, etc. as a proportion of the value of property in circulation! In 2010 a

<sup>12</sup> This is defined as a single event committed by more than one person or protracted over time but committed by a single entity. See COM(2013) 548 final.

<sup>13</sup> This consists of fraudulent expenditures costing 295 million (0.21% of total EU expenditure) and revenue frauds costing €109 million (1.24% of the gross amount of traditional own resources collected) in 2011.

<sup>14</sup> This is not something that the Commission includes in its figure, as EU Member States were not willing to report to it on their VAT fraud losses, even if EU rules facilitated such losses. This type of fraud is in fact ultimately a loss to national budgets, not the EU budget. The contribution from Member States to the EU is approximately 3% of the national harmonised VAT base; in 2010 this represented €14 billion, about a tenth of the EU budget. As VAT is part of the own resources of the EU, VAT fraud will lead to losses of income for both the Member States and the financial interests of the EU.

<sup>15</sup> *Commission Staff Working Document Impact Assessment Accompanying the Proposal for a Council Regulation on the establishment of the European Public Prosecutor's Office*, {COM(2013) 534 final} {SWD(2013) 275 final}, p.7.

<sup>16</sup> COM (2012) 408, p.12.

<sup>17</sup> (2013) *Identifying and Reducing Corruption in Public Procurement in the EU: Development of a methodology to estimate the direct costs of corruption and other elements for an EU-evaluation mechanism in the area of anti-corruption*.

<sup>18</sup> See also *Annual Report 2011 on the Protection of the European Union's Financial Interests*, SEC (2012) 408 final.

total of €2 406 billion - around one fifth of EU GDP - was spent on public procurement of goods, works and services, via hundreds of thousands of public contractors with very different access to data and skills. The actual and opportunity costs (e.g. delayed payments, deterrence of SMEs because of extra bureaucracy) of controls must be set against that and if controls are not effective, then they add to 'the costs of responses to crime' without producing any corresponding benefit.

Corruption risks are related to the specifics of product and service markets, in terms of demand and supply structures and existing levels of organised crime penetration of e.g. construction contracting, understood to be higher in Bulgaria and Italy than in the rest of the EU. The PwC/Ecorys study was not asked to examine issues in the context of 'organised crime': to that extent it takes us no further than an earlier study by PwC (2011). That PwC study ended (creditably, in our view) without any estimate of the cost of organised crime involvement in EU fraud, and concluded that 'little information on how and to what extent organised crime misuse EU funds is available from OLAF, Europol, Eurojust and ECA.' Only Eurojust was able to produce some figures: 42 cases of offences against the financial interests of the European Union were recorded by Eurojust from January 2004 until October 2010. Of these, in 2009 three cases were registered at Eurojust as offences affecting the EU's financial interest which were also committed by organised crime groups. Additionally, a total of 197 VAT Fraud cases have been registered at Eurojust in the period January 2004 and October 2010. However, no figures are available on the magnitude of these cases.' The Eurojust Annual Report 2012 avoids the organised crime aspect, but registered 27 EU fraud cases in 2012 and 21 in 2011 (which represent cases that require substantial cross-border investigative help). The SOCTA 2013 begins to chart a more subtle path, but much depends on whether we follow a conventional construction of 'organised crime' as consisting of networks of wholly bad actors connected with other forms of criminality or a more complex and variegated construction that might be described as 'organised professional criminality'.

*A priori*, one could posit a model of EU vulnerability to organised crime groups which differed by the nature of the services offered, the level of guardianship (e.g. independent audit and functioning criminal justice, avoiding the tautology that often is implicit in 'capable guardianship'), and the embeddedness of crime networks. In addition to intent and capability - the classical factors in threat assessment - one might also take into account the extent to which these scams could be operated remotely, e.g. carousel fraud, rather than requiring within-country network strength. The researchers did not consider these issues, but they might partly account for differences in risk. Corruption is often accompanied by inefficiency, making it hard to separate out the pure costs of corruption.

An otherwise valuable study by the Asser Institute and PISM<sup>19</sup> contained almost no data on the costs of corruption or organised crime involvement therein. Reckon (2009) examined the 'VAT gap' for each member state based on 2006 data. This includes fraud and other factors such as legal avoidance and unpaid VAT from insolvencies. The study estimated the gap at €106.7 billion in 2006 within the EU-25; an average of 12% of the net theoretical liability, although several member states are above 20%. The most common type of VAT fraud is the 'missing trader' or 'carousel' fraud, which arises when a business makes a purchase without paying VAT, then collects VAT on an onward

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<sup>19</sup> (2012) *Prevention of fraud, corruption and bribery committed through legal entities for the purpose of financial and economic gain* (Project HOME/2010/ISEC/AG/081)

supply and disappears without paying back the VAT collected. It is common with high-value goods sold across borders, such as computer chips and mobile phones. But the **fraud has more recently moved into services that are bought and sold like goods**. In Europe, fraud with carbon dioxide (CO<sub>2</sub>) emission allowances caused more than €5 billion losses in tax revenues in 2009. CASE (2013) estimates that the total VAT Gap for the 26 EU countries was about €193 billion in 2011, or about 1.5 percent of the GDP of the EU-26, an increase from the 1.1 percent in 2006. Italy, France, Germany and the United Kingdom contributed over half of the total VAT Gap in absolute terms, although in GDP, the countries with the largest gaps are Romania, Latvia, Greece and Lithuania. However the report made it clear that these were not measures of VAT *fraud*, which is an unknown proportion of the total.

Reckon (2009) concluded that the two most significant research efforts to measure MTIC fraud were that of HM Revenue & Customs, mentioned above, and a study by the Belgian Finance Ministry. The Belgian estimates, which also exclude carbon MTIC fraud, are slightly lower than the Europol estimate for the entire EU (€19.9 billion compared with €23 billion). Their estimate for MTIC fraud in the UK was more than twice as high as the UK's own estimate: Reckon state that they cannot explain the differences. Skatteverket (2008: 63) found that almost a third of Swedish VAT fraud was international, but the largest single category was domestic unreported sales by companies. Other national VAT studies are discussed in Annex D. Borselli (2011) estimated the overall volume of VAT fraud in the EU-27 at €20-35 billion a year, including various forms of VAT fraud and customs fraud such as MTIC (estimated total €13-23 billion) plus extra-community fraud, VAT fraud on tradable services, under-invoicing of imports, and specific fraud schemes such as fictitious trades in emission certificates (estimated tax loss €5 billion). Borselli further notes that VAT fraud differs from country to country, but individual country estimates should be considered with great caution. However in our view, **it would be a mistake to freeze these figures and assume that they are permanent features: they depend on motivation, crime networks and what we do to prevent fraud and to prosecute/imprison offenders**.

Ainsworth (2011) concludes:

The only reliable conclusion that can be drawn about the size of the MTIC fraud problem in the EU is that current estimates are highly speculative and miss entire classes of fraudulent transactions. EU losses are enormous. Because VOIP and other tradable services types of missing trader fraud are not confined to the EU, there is much more to measure. It will take considerable international cooperation to combat the problem.

## 7.1. Cigarette Smuggling and Excise Fraud

There is relatively little material on the cost of excise fraud in the EU as a whole. The annual EU-wide tax loss due to cigarette smuggling is estimated to be approximately €11.3 billion. KPMG (2012) stated that the total counterfeit and contraband cigarettes accounted for a tenth of total EU cigarette consumption in 2011 (629 billion cigarettes). The EPPO study placed the loss at around €1 billion to the EC budget. It did not look at indirect costs, but to the extent that counterfeit (rather than contraband) cigarettes are poorer and unregulated in quality and – in some respects like illicit drugs – pose greater health risks as a consequence, the indirect costs should be scaled up significantly from these direct ones. Some counterfeit cigarettes are a fraud upon the consumer as well as against the revenue authorities. Some know they are buying counterfeits but want

cheap cigarettes; others may be deceived by the same quality packaging that makes interception more difficult. Those purchasing counterfeits can read (and ignore) the same health warnings that are displayed on genuine tax-paid and smuggled cigarettes.

## 7.2. Response Costs of EU Fraud

OLAF's running costs for 2012 amount to €57.4 million, plus €21.5 million in grants and project funding to help authorities and organisations fight fraud both inside and outside the EU. Individual country enforcement (and prevention) costs are not available. The OLAF Fraud in Figures asserts: 'EU countries manage 80% of EU funds and have primary responsibility for fighting fraud. They employ most of those involved in this fight for example 500 000 police officers.' However it is absurd to imply that this number of police are actually engaged in fraud work, though theoretically they could be. There are no data on what proportion of Eurojust's €32 million budget is spent on EU fraud, though almost by definition of its mandate, most of it is spent on organised crime cases. At least 2 953 anti-fraud criminal investigations were launched in 2012 (though 12 MS did not respond), but their cost is unknown. There were 261 court verdicts (including not guilty ones) in 2012; and there were 199 convictions and 31 acquittals in the EU27 in 2011. So with an average of under 10 cases per country per year, and not particularly long average sentences, it should be inferred that the criminal justice response costs to EU frauds are quite modest. The extent to which this low prosecution rate increases fraud rates and therefore future costs of EU fraud is one of the issues reviewed in the EPPO Impact study. In addition, there are preventative costs which are both response and anticipation costs in the standard model – in fraud generally, it is notoriously difficult to separate out the system costs from specific anti-fraud costs, and because this is not done in the literature, we have no capacity to embark on it for this review.

To be set against the costs, we should note the recoveries. OLAF asserts that €1.8 billion was recovered in 2011, with a recovery rate of 52-93% depending on the sector: these recoveries, we must assume, are from irregularities generally, since on average OLAF has recovered €100 million a year from fraud. But this is far greater than the sums in both fraud and irregularities, so it is not clear how it was arrived at. Only 8 MS provided data on the amounts recovered in EUR related to fraud following administrative anti-fraud checks (excluding financial penalties and interests). However of the MS which submitted the data for the years 2011 and 2012, Poland is on top with €73.6 million recovered in total, followed by Italy with €23.8 million and Romania with €14.2 million: it is not helpful of OLAF to present these figures in this way, since they must be halved to generate annual recoveries of around €56 million. Concerning (a) amounts recovered in relation to criminal investigations (excluding financial penalties and interests) and (b) financial penalties, the majority of Member States did not provide any data or the data are not collected.

## 8. ORGANISED FRAUD IN THE PRIVATE SECTOR AGAINST BUSINESSES AND INDIVIDUALS

### KEY FINDINGS

- Our knowledge that fraud is 'organised' or even has happened at all often depends on investigation, interpretation and data matching: some EU countries and sectors are better than others at beginning and following through with these.

- Fraud costs to business can be seen as absolute numbers; as ratios of legitimate business turnover; and/or as ratios of profitability.
- For individuals, fraud costs can be seen as absolute numbers; as ratios of income and wealth; as emotional impacts; and in terms of how long it takes to recover.
- Extrapolating UK data to the EU, and normalising to the Purchasing Power Standard, fraud against individuals cost €79 billion in the EU.
- Payment card fraud cost €1.16 billion; Insurance fraud - €1 billion (in UK alone).

There is a broad variety of fraud offences affecting business, committed by insiders, outsiders and collusively. The last two categories are sometimes associated with organised crime. Some of these offences are caused by individuals acting alone or in pairs; others are increasingly committed by crime networks who may use businesses – whether real functioning ones or mere fronts – as tools for crime. We can consider fraud costs as absolute numbers; as ratios of legitimate business turnover; and/or as ratios of profitability (i.e. to work out how much business a firm would have to do in order to recover the losses).

In many areas of fraudulent activity, what is known about is partly a function of how much effort we put into discovering the losses, identifying the losses as fraudulent, and identifying the connections – if any – between that event and other events. It is making these connections that enables us to identify the losses as ‘organised crime’ frauds rather than just isolated acts or indeed as legitimate conduct such as making a claim. This does not mean that *other* frauds are not ‘organised’ – they may be perfectly organised to attain their purposes – but merely that they do not need three or more active perpetrators. Thus Chief Executive Officers or Chief Financial Officers – or even persons lower down the status chain – may be able to rely on others in their organisations, in their banks and in their lawyers’ officers doing their jobs unquestioningly as unwitting ‘enablers of crime’ and technically falling outside the scope of ‘organised crime’. This does not make their acts less costly or less socially harmful: just that ‘organised crime’ excludes many very serious crimes committed by people in authority.

One of the reasons that fraudsters often are successful is that they keep incidents separate and often have a superficially plausible reason to reassure us of their legitimacy: we do not have the resources and scepticism to verify or falsify every commercial transaction, and it would not be cost-effective to do so. It is in ‘volume fraud’ – whether or not connected to frauds against the EU – that the biggest gains in our understanding (and prevention) can be found by data matching. Data matching is partly a social product of (a) how much industry actors are prepared to share – which usually follows an alarming increase in visible fraud – and (b) what data protection legislation allows. This is highly variable across the EU and therefore we can expect both awareness of organised fraud and actual levels of fraud to vary, since the absence of data matching encourages fraudsters to think that they can get away with it. On the other hand, people planning such frauds may need in-country participants, so unless they are networked they may find some frauds impossible. Though individual scams may not need active gang members, motor insurance frauds, for example, may need a collaborative group of drivers, injury claimants, car hire firms, vehicle engineers, lawyers and even doctors to maximise their profits: and these may not be available in other EU countries like they are in the UK (Levi, 2008b; IFB, 2013). On the other hand, those fraud-facilitating personnel may be available, but because insurers in those country do not pool all their data and use social networking software to match and examine

connections like they now do in the UK, the insurers do not realise that the claims are connected. This was the case in the UK until 2006. A similar process occurred in the payment card industry, but data matching occurred at a much earlier period, in the aftermath of a report of 1991 (Levi et al., 1991), and developing subsequently (Levi, 2008c). However, we should not assume that all rises in fraud are due to greater organised crime involvement. Data from the UK show that recent rises in mortgages and credit application fraud, for example, have been driven by deception in income and job status by individuals keen to maintain or improve their standard of living rather than by organised crime groups or networks (CIFAS, 2013; Experian, 2013).

## 8.1. Motor insurance fraud

Induced motor accidents are an example of organised fraud, which is where an innocent motorist is forced to crash into the back of the fraudster's vehicle. Claims are then made against the innocent motorist, and these often include accounts of fictitious injuries from others, some of whom may not even have been involved in the accident and may have been recruited from the community to make false claims or may be longer term gang members. Criminal gangs have bogus claims running with numerous insurers at the same time. Other examples of organised insurance crime include fraudulent arson or disability claims and supplier fraud, where insurers receive bills for work that has not been done.

'Crash for Cash' organised frauds alone cost the UK motor insurance industry £392 million each year, out of the £1 billion total identified fraud costs, with an unverified estimated £2 billion more. An unknown percentage of these – beyond the £392 million – meet the 'organised' criteria; many are or appear to be individual exaggerations of claims. British Insurers invest about £200 million a year in counter-fraud activity, including an industry-funded specialist police unit, the Insurance Fraud Enforcement Department, which made 260 arrests in 2012. The Insurance Fraud Register, launched in September 2012, provides the first industry-owned, cross-sector register of known fraudsters. Following government claims that the UK was the 'whiplash capital of the world'<sup>20</sup> – some of it fraudulent and others incentivised by specialist firms of claims lawyers – a House of Commons Transport Committee investigation analysed the situation and concluded:<sup>21</sup>

**There is no authoritative data publicly available about the prevalence of fraudulent or exaggerated claims for whiplash injuries and no consensus about what constitutes fraud.** Estimates of the percentage of claims which were fraudulent ranged from 0.1% to over 60%. These estimates were based on firms' caseloads, statistical extrapolations or survey data.

No data appear to be available for insurance fraud in the EU generally, or even for other countries. One question that the CRIM Committee might ask themselves is why British fraud should be much higher in these areas that are largely unexamined in other EU countries. It is possible that the dynamics of learning to commit fraud occur more readily in the UK among certain groups. However it is also possible that insurers and

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<sup>20</sup> In 2004, the UK generated a higher proportion of bodily injury claims compared to overall claims than eight of the nine other countries studied and a higher proportion of "cervical trauma" claims than any of the other countries. See *Comité Européen des Assurances* (2004); Chappuis and Soltermann (2008).

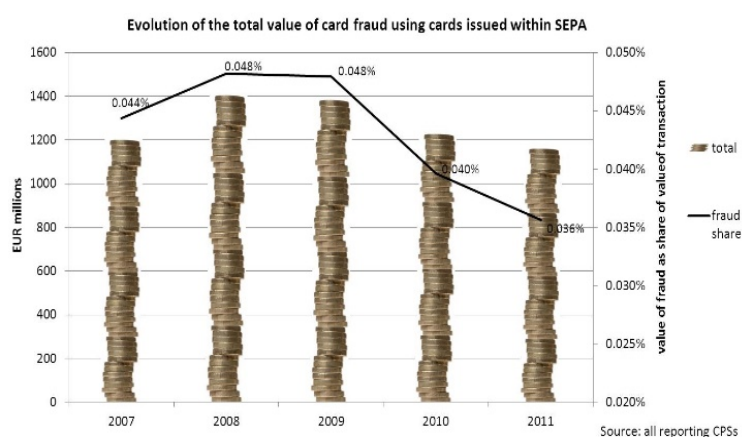
<sup>21</sup> [Fourth Report of Session 2013-14: Cost of motor insurance: whiplash \(PDF\)](#) para 24.

public authorities in other EU countries have simply failed to aggregate data or have been prevented by data protection rules from doing so, and that therefore those jurisdictions are actually more vulnerable than the UK to organised fraud but do not realise it.

## 8.2. Payment card fraud

The value of legitimate non-cash transactions with EU issued cards exceeded €3 trillion in 2011. The total amount of fraud was €1.16 billion in 2011, down 5.8% from the previous year. In 2011 some 56% of the value of fraud resulted from card-not-present (CNP) payments – i.e. payments via post, telephone or the internet – while one-quarter resulted from point-of-sale (POS) terminals and about one-fifth from automated teller machines (ATMs). The value of domestic fraud increased from 2010 to 2011, though by less than the value of transactions. Cross-border fraud within the Single European Payments Area (wider than the EU) and cross-border fraud acquired outside SEPA (i.e. transactions took place outside the EU) fell from 2010 to 2011 to reach their lowest levels since 2007. **Although only 2% of transactions were acquired (i.e. goods and services were purchased) outside SEPA, they accounted for 25% of all fraud, showing the preference among fraudsters to exploit low security standards, such as magnetic stripe technology, outside the EU – mainly the US.** The fraud-related share of transaction value or volume ranged from 0.004% for Romania to 0.061% for Luxembourg in terms of value, and from 0.001% for Lithuania to 0.027% for France in terms of volume. Indeed, from a issuing perspective, the rates of fraud in Luxembourg and France were the highest and more than ten times higher than, for instance, those in Romania, Poland, Hungary, or Slovakia, which had the lowest rates, perhaps reflecting greater caution in issuing cards in those countries. From an acquiring perspective (i.e. where the frauds happened), Ireland experienced the highest rates of fraud, and Lithuania had the lowest rates.

**Table 4: Fraud on Cards Issued within SEPA**



## 8.3. Fraud against EU Companies

There are now periodic commercial surveys that examine fraud victimisation in companies, but seldom its costs, and then often ill-conceptualised (Annex E). Studies of the cost of organised crime attacks on companies face two principal challenges: ascertaining the direct and indirect costs of economic attacks, and attributing any such

losses to organised crime. Cyber-attacks have received the greatest attention in recent years, to the neglect of other features of corporate victimisation by insiders and by credit/lending frauds, for example. As the rhetoric of cyber-attacks shifts from former Soviet organised crime to state-sponsored attacks from China and Russia (or from the US), the organised crime threat risks being neglected, not necessarily correctly: crime networks can gain the profits while sometimes sharing it with officials and attacking their economic enemies.

The Home Office (2012) has recently conducted a business victimisation survey *for England and Wales only* that is relevant to this work. In it, they specifically asked business to what they attributed their crime(s). Organised crime is defined by them as 'crime which involves individuals, normally working with others, committing serious crime on a continuing basis'. In the most recent incidents of thefts of vehicles, around half (47%) of respondents thought that the offence was carried out by an organised group of criminals. Just over a quarter of respondents thought an organised group of criminals committed the latest incidents of burglary and theft from vehicles (30% and 26% respectively). The crime types least likely to be thought to have been carried out by an organised group of criminals were assaults and threats (3%), thefts by employees (0%) and fraud by employees (0%). These results look plausible, but they do assume that the corporate victims have an accurate idea of who the offenders are, rather than reflecting their stereotypes of what sorts of activity are organised – as with other unsolved crimes, but to a lesser extent, it is not always obvious who the offenders are. More details are set out in Annex F. The UK National Fraud Authority (2013: 10, see also 32-24) estimated that 'fraud perpetrated by organised criminals is cautiously £18.9 billion. This includes £8.9 billion of £24 billion of fraud identified to have an organised crime element, along with an additional £9.9 billion estimated to be lost to OCG fraud.' However, these estimates are at the lower end of its confidence scale.

#### **8.4. Organised frauds against individuals in the EU**

Some of the frauds in the previous sections have direct and all have *indirect* impacts on individuals. In some 'crash for cash' insurance frauds, organised fraudsters intentionally induce drivers to crash into them so that they can claim whiplash injuries; this causes both distress and economic loss of 'no claims' bonuses, and can lead to physical injuries for the innocent driver. No data are available for these innocent collateral injuries. Some card frauds require crimes like theft, burglary and robbery to generate the stolen cards – paradoxically such harms are less now that people just 'steal' (actually 'borrow' or 'duplicate') personal data. However apart from distress, there is also the time and trouble taken to repair credit records, sort out replacement cards, etc.. There are no EU-wide data on these.

Very little effort has been made to measure the *cost* of frauds against *individuals* in the EU (or elsewhere). On average, 12 % of respondents said in 2005 they experienced some type of consumer fraud over the past twelve months. Greece, Estonia, Hungary, Denmark and Poland had relatively high rates, i.e. 13 % or more were victimised. Levels of fraud were lowest in Finland, Italy, the Netherlands and Ireland. Few countries show any clear trends. Analyses at the global level have shown a relationship between the size of the informal sector of the economy and the level of fraud. Just over half mentioned where the frauds took place. Altogether, just over a third mentioned shops, and about one in ten mentioned building or construction work. It is unlikely that these are 'organised' in the sense that this study is using that term.

#### 8.4.1. Identity theft and fraud

The Eurobarometer (2012) notes that 12% of internet users across the EU have experienced online fraud where goods purchased were not delivered, were counterfeit or not as advertised. This survey did not ask about their and/or business losses from these frauds. The proportion of internet users that say they have experienced online fraud is similar in most EU countries. The highest figures are in Poland (18%), Hungary (17%), Malta (16%) and UK (16%), while respondents in Greece (3%), Slovenia (6%) and Spain (7%) are least likely to have experienced online fraud.

8% have experienced identity theft, 1% 'often'. This identity fraud figure is similar in most EU countries, but is highest in Romania, where 16% of internet users say they have experienced identity theft, including 5% who say it has happened to them often. Respondents in Hungary (12%), UK (12%) and Austria (11%) are also more likely than average to say they have experienced identify theft. The lowest levels are in Slovenia (2%), Lithuania (2%), Greece (3%) and Denmark (3%). 13% have not been able to access online services because of cyber-attacks. In addition: More than a third (38%) say they have received (note – not defrauded by) a scam email, and 10% say that this is something that has happened to them often, the rest occasionally. In indirect cost terms – fear or concern – 61 % were concerned (24% very concerned) about identity theft, nearly half (14% very concerned) about what one might call consumer detriment fraud, and about the same for receiving scam emails.

#### 8.4.2. Some national studies of consumer and investment fraud

In 2005 an Office of Fair Trading survey, involving over 11,200 interviews, found that nearly half of the UK adult population had been targeted by a scam and that every year one in 15 people (3.2 million adults) in the UK fall victim to a scam involving deceptive unsolicited mailings, phone calls, or emails. The average amount lost per scam was £850.<sup>22</sup>

The research suggests that consumers lose around £1.2 billion every year to bogus holiday clubs, £490 million to high risk investment scams, £420 million to pyramid and get-rich-quick schemes, and £260 million to fake foreign lotteries. On average a victim has a 30 per cent chance of falling for another scam within 12 months of first being defrauded, most likely because their personal details are added to a so-called 'suckers list', which are then sold on to other scammers. Note that annual surveys do not normally focus on multiple victimisation, where the same individuals are targeted several times – but this is an important issue, especially because UK research shows that fraudsters target vulnerable older people (National Fraud Authority, 2013). It is a moot point whether given a particular level of economic damage overall, it is worse if a small number of people are targeted multiply, concentrating the burden, or if a wider range of people are victimised just once, spreading the burden.

Whilst older consumers were more likely to be targeted by a scam, the highest percentage of victims were aged between 35-44 years. In addition, the research showed that less than five per cent of those scammed reported their experience to the authorities, and more than half of victims stated that have since changed their shopping behaviour, for example by becoming less likely to respond to any unsolicited offers or

<sup>22</sup> The highest average losses per victim were £5,660 for investment scams, £5000 for African advance fee scams, £4,240 for property investor scams, £3,030 for bogus holiday club scams, and £1,900 for foreign lottery scams.

shop on the internet. (Though beliefs about changes in behaviour may not correspond to actual changes.)

The UK National Fraud Authority followed up some of these themes, and National Fraud Authority (2013) estimates that fraud against individuals in the UK costs £9.1 billion per annum, based on estimates of the scale of mass-marketing fraud, identity fraud, online ticket fraud, private rental property fraud and electricity prepayment meter scams. To understand levels of fraud awareness and victimisation of individuals, the Authority commissioned a nationally representative survey with 4,213 people in December 2012. This showed that 8.8 per cent of participants were aware that they had been a victim of identity fraud within the previous 12 months, losing an average of £1,203 each. Over one-quarter (27%) stated that they had experienced identity fraud at some point in time.<sup>23</sup> **We suspect that there are cultural and linguistic features that make UK a more tempting target for scammers, but extrapolating UK data to the EU population as a whole, and normalising to the Purchasing Power Standard, this would imply that fraud against individuals cost €79 billion in the EU.** A more realistic figure allowing for differential vulnerability would be lower than this, but much of the cost would be attributable to organised crime in the Palermo sense, though little to Mafia-type associations.

## 8.5. Indirect costs

There are a variety of indirect costs arising from ecrimes, as well as direct response costs. These costs are not specific to ecrimes committed by organised crime. There are particular problems about knowing how many people were part of organised crime networks in situations where very few of them are detected or convicted (itself, a ground for social alarm). However such crimes are nowadays generally part of an organised market on which they rely for the accomplishment of their crimes. So it may reasonably be argued that they are 'organised crime' networkers.

The second largest retailer judgment of key obstacles to cross-border sales for European retailers is potentially higher risks resulting from fraud and non-payment (32 %). 29% of consumers who had not shopped online at all gave as their reason for not shopping online "I have concerns regarding misuse of my personal/payment details",<sup>24</sup> and 15% of those who shopped online but did not buy from a shop in another country gave that as their reason (p.22). 2% of consumers who experienced a problem buying online – both domestic and abroad – stated this was because their payment details were stolen. Unfortunately there are no economic values attached to these, though they should show up in the ECB's Payment Card Fraud statistics. The Commission document provides interesting data on enforcement practices and costs, but the cost of protecting against fraud – and particularly fraud by organised crime – understandably is not separated out.

A recent study of cybercrime (see also Annex A), which one of us co-authored concluded:<sup>25</sup>

<sup>23</sup> NFA, *Annual Fraud Indicator 2013*.

<sup>24</sup> DG Health and Consumers (2012) *Consumer Conditions Scoreboard, 7<sup>th</sup> Edition*, SEC(2012) 165 final, p.21

<sup>25</sup> Anderson, R., Barton, C., Bohme, R., Clayton, R., van Eeten, M., Levi, M., Moore, T. and Savage, S. (2012). There is no space here for more detailed discussion of these issues at an EU level. When reviewing the data used in the Anderson et al study, note that the GDP of the 509 million citizens of the EU27 collectively was €12.423 trillion in 2012; the UK GDP was €1.626 trillion for its 63 million citizens; nominal Gross World Product was €53.660 trillion in 2012. However comparisons should really be made on the basis of Purchasing Power Parity.

- Traditional frauds such as tax and welfare fraud cost each of us as citizens a few hundred pounds/euros/dollars a year. With such crimes, the costs of defences, and of subsequent enforcement, are much less than the amounts stolen.
- Transitional frauds such as payment card fraud cost each of us as citizens a few tens of pounds/euros/dollars a year. Online payment card fraud, for example, typically runs at 30 basis points, or 0.3% of the turnover of e-commerce firms. Defence costs are broadly comparable with actual losses, but the indirect costs of business foregone because of the fear of fraud, both by consumers and by merchants, are several times higher.
- The new cyber-frauds such as fake antivirus net their perpetrators relatively small sums, with common scams pulling in tens of cents...per year per head of population. In total, cyber-crooks' earnings might amount to a couple of euros per citizen per year. But the indirect costs and defence costs are very substantial – at least ten times that. The clean-up costs faced by users (whether personal or corporate) are the largest single component; owners of infected PCs may have to spend hundreds of euros, while the average cost to each of us as citizens runs in the low tens of euros per year. The costs of antivirus (to individuals and businesses) and the cost of patching (mostly to businesses) are also significant at a few euros a year each.

## 9. ORGANISED MOTOR VEHICLE CRIME

### KEY FINDINGS

- *'There is a stable or even declining trend in motor vehicle theft...a recent increase in the thefts of heavy vehicles such as agricultural and building machines, buses and trailers, which are all in high demand in the Baltic states and the Russian Federation'* (SOCTA, 2013)
- Unrecovered motor coaches and lorries totalled at least €4.5 billion losses in the EU

Eurostat data show that in recent years, domestic motor vehicle theft in the European Union has been falling due to immobilizers and tracking devices that made cars harder to steal and easier to recover. However, the car theft industry is still large and lucrative. The cost and impact issues can be quite complex. Where insurance for legal vehicles is universal, most direct financial losses (other than inconvenience and time taken to organise replacement) accrue to insurers. But apart from increasing future premiums, the main collateral damage occurs where people are physically threatened to give up their vehicles, or homes are broken into to steal car keys.<sup>26</sup>

Despite greatly enhanced car security technologies, Europe's open borders and uneven patchwork of vehicle databases make car theft relatively easy. It takes only 14 hours to deliver a stolen car from central Italy to a buyer waiting in Albania. EU periphery countries are strong markets for stolen cars.

<sup>26</sup> There is one additional aspect, which arises from a victim-focused perspective: some cars retain an emotional attachment to the owner, and irrespective of that, some low-insured vehicles are worth far more to the owner than their insurance value, because the owner cannot get an equivalent car for the same price range. However such cars are very unlikely to be stolen by organised criminals, so they are omitted from this study.

On a global scale, *"there is a stable or even declining trend in motor vehicle theft. However, there has been a recent increase in the thefts of heavy vehicles such as agricultural and building machines, buses and trailers, which are all in high demand in the Baltic states and the Russian Federation"* (SOCTA 2013). As the result car thefts have attracted lower police priority except in Eastern Europe, where progress in combating Motor Vehicle Crime is a basis for efficiency standards in law enforcement and administration (such as vehicle registration). Only four EU countries saw the number of motor vehicle thefts increase between 2007 and 2010. In Bulgaria there was an increase of 8 %; increases of around 20 % were reported by Cyprus and Greece, while in Romania, the number of thefts over the same period increased by 39 %.

In 2011, multiplying vehicles reported stolen by their average insured values, total net losses in the EU from *unrecovered* vehicles approximate to €4.25 billion, on the very conservative assumption that the vehicles unrecovered are no higher in value than recovered ones. More than half the vehicles stolen were either smuggled out of the EU, or 'laundered' within the EU as cloned vehicles or 'chopped' and then sold as spare parts. Unrecovered motor coaches and lorries totalled at least €4.5 billion in value (because of their much higher average value). No cost data are available for stolen plant and machinery.

## 10. INTELLECTUAL PROPERTY THEFT

### KEY FINDINGS

- IP crimes vary enormously in **physical harm risks**, in **financial impacts on businesses** and in **the extent to which purchasers of counterfeits would have bought the licit goods** at full price
- Though IP theft can be undertaken by a single individual, the large scale and large value IP thefts are almost certainly undertaken by organised actors
- We estimate **€50 million a year** damages on average from Euro counterfeiting

### 10.1. Scope

Intellectual property (IP) crime includes the wilful infringement of registered trademarks (counterfeiting) and the unauthorised copying and use of material protected by copyright (piracy), which can range from mass-production of consumer products<sup>27</sup> to the theft (by cyber-means or via corrupt staff or old-fashioned copying/theft) of highly specialised industrial designs or techniques that have taken years to develop. The latter might be regarded as a form of economic warfare and, although the focus is often on the threats posed by ancient political foes such as China (European Commission, 2011, 2012, 2013) and Russia (Anastasi, 2004), US, EU or domestic companies can spy on each other also if they consider it possible, especially if detection seems unlikely. IP theft can include physical (i.e. goods to be physically used, consumed, or deployed by a person) and digital goods traded in both physical and virtual locations.

Though IP theft can be undertaken by a single individual, the large scale and large value IP thefts are almost certainly undertaken by organised actors, whose interaction is by

<sup>27</sup> An extensive list is available in appendix A. Note that the rise of on-line downloading and the reduction of time between availability in the US elsewhere has reduced significantly the demand for counterfeit DVDs in Europe.

definition organised crime. With the counterfeiting of physically traded items, IP theft is not restricted to mafia-type associations. With digital theft, organised actors are more likely to be a loose network of unaffiliated users, such as peer to peer (P2P) sharing and membership-based download websites (BAE Systems Detica, 2012). Hacking groups, such as the Elderwood Gang (Symantec, 2013); warez groups, which provide hacks to software (Treverton et al., 2009); and groups underwritten by competing firms (Economist Intelligence Unit, 2012) or, possibly, governments (Symantec, 2013) also facilitate IP theft.<sup>28</sup>

This research acknowledges that IP theft poses some threats to society and the economy. However although there are identifiable costs to IP theft, it also indicates that these costs are largely incalculable due to a lack of reliable data (see further, Anderson et al., 2012). Moreover, this research suggests that current methodologies, especially those related to digital piracy, are fundamentally flawed and result in inadequate and misleading estimations. (Annex G reviews the relevant evidence more broadly.)

## 10.2. Euro counterfeiting

The counterfeiting of banknotes and coins is a special case of IP theft, and as with other 'quality IP crimes', not all of it is detected. There are also no incentives to hand in counterfeits unless there is compensation, so it is reasonable to expect a lot of them to be recirculated until detected. The European Central Bank withdrew 317,000 counterfeit euro bank notes from circulation in the first half of 2013, but perhaps to reduce public alarm, they are not explicit about the total value of these, which have to be painstakingly recreated. The Impact Assessment for the Directive on Euro Counterfeiting (2013) stated that in the decade since the introduction of the Euro, financial damage of at least 500 million euro had been caused, and we would set that as a minimum figure, i.e. €50 million a year on average.

## 10.3. Concluding remarks

In sum, there is little robust data regarding the costs of IP theft. Research regarding the consequences of digital theft needs to consider market changes and buying patterns of consumers who access unauthorized material. Research on IP theft, broadly, must attempt to estimate the substitution effect that counterfeited products have. Nonetheless there are identifiable threats resulting from IP theft, particularly concerning food and pharmaceutical counterfeiting, which need to be taken seriously in spite of the inability to estimate their costs to society with any precision.

# 11. ENVIRONMENTAL CRIMES

## KEY FINDING

- With current data, we are unable to put a realistic minimum price on environmental crimes committed by organised crime groups. However these are locally very serious and can be expected to increase as controls make licit

<sup>28</sup> We have focused here upon a selection of EU literature. There is a broad range of relevant research on cybercrime outside the EU that we have not sought to review.

dumping relatively more expensive and both suppliers and intermediaries are pressurised.

The dumping of hazardous and other waste against national and EU regulations with or without the *active* complicity of corporations is an important aspect of organised crime. It is important to see this as conduct by 'conscious opponents' exploiting economic opportunities rather than as an accidental set of events. Transcrime (2013) has shown it to be a major profit-generator for Italian organised crime. Ongoing research which has recently commenced is investigating the cost of environmental crimes in the EU (<http://efface.eu/>), but no reports are yet finalised or available. An earlier study coordinated by Frohlich (2003) concluded that the data were too poor to do much with: 'For all EU Member States a total of 122 cases was found for the period of 1992 to 2003. In some of these 122 cases no full prove could be found concerning the required qualification as organised crime (OC).' The definition as 'organised' was a source of difficulty:

'app. 73% of the researched cases show involvement of corporations or corporate-like structures. Criminal activities thus is allocated to the "white-collar" sector. This fact further complicates investigations due to conflicts of interest arising for example from interest in securing the economic future of an area, prevention of job losses etc. Enforcement agencies thus are not confronted with the classical "bad guys" but moreover with often highly respected players of economic life with the resulting unattractiveness of the environmental sector as profiling platform for enforcement.'

## CONCLUSIONS

Disappointingly, we have had to devote a lot of this report to explaining why confident or even plausible estimates for particular types of organised crime are not available or cannot reasonably be inferred. Nevertheless, our assessment of the available data and materials has identified some important ways in which thinking about organised crime and its impacts and harms can be improved. For instance, reflecting the observation that particular types of organised crime tend to be concentrated in certain places and states, the intensity and scale of organised crime impacts are not uniformly distributed across MS has many implications.

Differentiating between scale and intensity of harms/costs starts to open up new avenues of measurement. The former dimension keys into the number of individuals and/or groups who must bear some element of the costs. This is different from the intensity measure which relates to how much cost must be borne by each victim, relative to their ability to bear this. Extending this line of thinking future work in this area could be advanced by differentiating between types of cost in terms of who suffers and where. To construct such a framework we will draw upon Hunter's insightful differentiation between what he terms 'private', 'parochial' and 'public social orders', differentiated along three key analytic axes: basic social bond; institutional locus; and spatial domain. We can differentiate between:

- Private costs: impact upon individuals directly connected to the victim;
- Parochial costs: are born through community ties;
- Public costs: occur where the impacts are shared between citizens who are not directly connected to each other.

An associated consideration in respect of organised drug crime concerns judgements about whether the costs, are in a sense, tolerable compared with the effects of destabilising a market infrastructure. For example, in the early 1990s, a police force in the UK undertook a significant intervention explicitly designed to destabilise and disrupt an established drugs market. The longer term consequences of this was an increase in violence, including homicide, as other gangs sought to compete for the territory left empty by the gang that had been arrested. This is an extreme example, but it points to how there may be 'trade offs' involved in terms of the different types of cost that may be incurred. This raises some complex considerations in relation to how different forms of organised crime costs can be related to each other.

More generally, it appears that the simple division between 'white-collar crime' and 'organised crime' no longer makes sense, if it ever did. The use of corporations is commonplace as tools for fraud, whether against the EU, against MS with implications for their contributions to the EU, or against businesses as private individuals. They are also significant as enablers for money laundering, even though most prosecuted cases are not especially complex. AMOB (1997) concluded that the *economic* threat of organised tax fraud was far heavier than the threat from other activities of organised crime, and that may be the case today also. However, the weighting of harm is not just economic. Our imagery of organised crime in the movies and newspapers retains the dramaturgy of *The Godfather*, *The Sopranos* and possibly *The Wire*. This is helpful as a threat image but unhelpful as a guide to the complexity of the organisation of serious crimes and their varied impacts.

Organised crime is more harmful when it dominates an entire region and paralyses counter-efforts. That is not the case in most of Europe, but it is the case in parts. The CSD (2012) identifies the main threat posed to Bulgarian society as the market for sex services, VAT fraud and the markets for excisable goods, plus political corruption by oligarchs. Transcrime (2013) estimate that extortion costs Italians €4.7 billion, but we have little hard evidence on costs elsewhere. Part of the economic power of some groups arises from broadly distributed, modest-harm activities such as the sale of counterfeit products and non-standardised drugs, as well as, increasingly, scams whose techniques can be bought off the internet and operated by low skilled personnel because they have been industrialised. Even if the public thought that the groups who benefited from the sales were bad, it is not clear that they would regard buying fakes as particularly bad. But in order to reveal the organised-ness of many acts like consumer and insurance frauds, we need to find ways of exchanging data in the private and public sectors, and organised crime prevention is inhibited by cultural and legal restrictions. As in this report, in order to make sense of the organised crime issues, we need to pull apart the issues and analyse how different crimes are organised and what the consequences of that are. We also need to put those data together and look at how easily the search for co-offenders can escalate levels of particular crimes via poly-crime networks. We do not need to argue that criminals never specialise or never do anything but crime: they have their comfort zones like we do. But we hope that this report has helped the CRIM Committee, other MEPs and other readers think through what crimes they most want to combat and what aspects of co-offending offer the greatest threat to European citizens.

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## ANNEX A: THE COST OF CYBERCRIME

### A.1. Introduction

Although eCrime has climbed to the top tier in the National Security Strategy of EU MS such as France, the Netherlands and the UK – becoming a Tier One threat, above organised crime and fraud generally – it is an extremely broad category. It ranges at the one end from opportunist thefts (or, as we prefer to call them, ‘duplications’<sup>29</sup>) of personal data and buying things or taking out loans in someone else’s name; to systematic mass attacks on banks, major corporate Intellectual Property (IP) ‘duplication’ and state-sponsored or at least state-tolerated cyber warfare against both states and economic interests, at the other extreme. Some of these costs can reasonably be called organised cybercrime, because there are threat actors who are coordinated, but much of the market for identity data that are transformed into frauds occurs within an anonymous market, in which corruption is not needed, though corruption may protect cybercriminals in some countries, and in others they are state-sponsored.

Eurostat data show that 8% of internet users in the EU have experienced identity theft and 12% have suffered from some form of online fraud. Part of the social cost of fraud is that the media present us as on the edge of being drowned in a sea of rising cybercrimes, usually caused by foreigners and/or by alienated young people, such as are increasingly found, tragically, in the economically damaged regions of Southern Europe. But despite the relative ignorance of the public about cybersecurity, as found in the Eurobarometer survey, cyber-Armageddon is *not* just around the corner. As with fraud, we need to classify the source of threats into:

1. Corporate and governmental insiders, either alone or in networks
2. Organised criminals using skills to corrupt insiders or hack into systems
3. State-sponsored or state-tolerated networks engaged in activities that generate income by fraud, by theft of IP, or by extortion of companies
4. Individuals or small networks of varying skills and commitment to crime.

This is a fluid approach, and it is vital to see that people can shift over time into and out of crime. It is also an area for the creation of markets for skilled and automated products, obtainable anywhere in the world and available for experimentation in – sadly – usually a risk-free zone.

The issue of how much cybercrime is ‘organised’ and according to what definition remains contentious (Lusthaus, 2013). Cybercriminal forums are marketplaces for illicit goods and services, which generally operate in website form (with some on Internet relay chat channels). Commonly advertised and traded products include personal information, stolen credit card details and malware. Cybercriminal services are also advertised for hire. For instance, in one online post from the well-known (now defunct) DarkMarket forum, one offender offered to take down any website, by using distributed

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<sup>29</sup> Analytically, the common term ‘identity theft’ is normally mistaken. In offline theft, when one person takes property, the other loses it. In identity cases, however, the loser is left with their (usually impaired) identity, while the ‘thief’ and person(s) to whom the data and/or documents are re-sold makes whatever gain their skills and networks are enabled to generate. Therefore ‘borrowed’, ‘duplicated’ or ‘misappropriated’ are more illuminating terms than ‘stolen’. We hold out no great hope that usage will change as a result of these comments, but we hope this will make people think more clearly about it.

denial of service (DDoS) attacks for \$50 a day. He completed his post by stating that this 'is a great deal on DDoS attacks and cannot be beat by anyone!'. These fora often have a clearly defined hierarchy and agenda, with an administrator(s) in charge of the site, moderators who are tasked with overseeing the forum and making sure its rules are enforced; and then members of varied status and privileges. Cybercriminals move up the ranks by showing trustworthiness, ability or by offering favours to high-ranking forum members: a form of (dark side) integrity vetting. Under the DarkMarket system (closed down after international intervention), various forum officers took a 5% or £250 cut from transactions as a 'fixer's fee', in similar way that mafia members receive protection money. So in keeping with the Europol (2013) perspective on the centrality of criminal markets to organized crime, this market gave organization to previously disparate individuals, permitting them to escalate their scale of operations, and encouraging them to cause more economic harm to European and non-European victims. This poses a problem: even though individually, these cyber-thieves may not be part of a 'gang', the market enables them to become part of an organized set of criminal relationships. Are all the costs they impose on EU citizens and denizens therefore part of the 'cost of organized cybercrime'? Or do we focus instead on groups like the Russian Business Network, Romanian ATM gangs, etcetera?

Measuring the cost of eCrimes is a delicate and ultimately partly subjective issue, involving the weighting of emotional as well as objective economic impacts. It should be better recognised, however, that even these objective financial impacts contain elements of disputable interpretation, for example over whether competitor product developments are the result of hacking rather than of insider corruption or of mere coincidence in parallel development. The primary focus of studies to date has been on levels and forms of intrusion, rather than on costs. To the extent that costs are measured at all, the focus is typically costs to business, and though the one-off Office of Fair Trading (2006) scams survey did conduct a gold standard review of consumer fraud, it is hard to separate the online from offline data on fraud attempts and successes, and in eCrime terms, 2005 is a long time ago. Public anxieties about eCrimes are a social cost (with some economic consequences). Comparing results of the actual risk with the perceived risk, 20 times as many adults thought they were likely to become a victim of identity fraud than were likely to experience this (in Scotland, 10% thought this likely to happen compared with the actual risk of 0.5%).

## A.2. Measuring the Cost of Cybercrimes

Estimates of cybercrime costs are highly contested. We have become conditioned to believe that in order to generate control expenditure and powers to override privacy, very high attention-grabbing figures are needed: these become 'facts by repetition'. This is an unfortunate trend. One of us was part of a team (Anderson et al., 2012) who were asked by the UK Ministry of Defence in 2011 to do a relatively 'quick and dirty' calculation to stimulate some serious analysis to counterbalance some of the high guesstimates currently in circulation, which have little general credibility.<sup>30</sup> There are problems in attributing costs to the UK or indeed to Europe, which will be explored in later stages.

<sup>30</sup> *Measuring the Cost of Cybercrime* [http://weis2012.econinfosec.org/papers/Anderson\\_WEIS2012.pdf](http://weis2012.econinfosec.org/papers/Anderson_WEIS2012.pdf). See also 'How much does cybercrime cost the UK? Not £27bn', <http://www.pcpro.co.uk/blogs/2013/02/12/how-much-does-cybercrime-cost-the-uk-not-27bn/#ixzz2YUiyw2w>

No study of the costs of cybercrime can be definitive. The spectrum is between a narrow summation of the known direct costs of detected crimes (perhaps even restricted to cases where a conviction has been obtained, because only then is criminality definitive!), at one end, and speculative extrapolations from cases or secret investigations, at the other. In cyber, this is particularly complicated because it is a set of diverse acts representing *mechanisms* of crime commission, about which few organisations - whether victims or third parties like the police or vendors - compile data comprehensively or systematically. And unlike fraud,<sup>31</sup> relatively little systematic independent effort had gone into measuring the costs of many sub-components of 'the cyber problem'. For each of the main categories of cybercrime we set out what is and is not known of the direct costs, indirect costs and defence costs - both to the UK and to the world as a whole, since the attribution of costs to particular countries is especially difficult in cyber. With global estimates, some fairly crude scaling based on GDP or in some cases, volumes of internet trade, has to be done to estimate costs to particular countries. Since the means (e. g., botnets) would not be around if there were not ends (e. g., phishing victims), we consider losses caused by the cybercriminal infrastructure as indirect by nature; irrespective of whether or not the legal framework formally criminalizes the means. We were more cautious than many others about the costs of Intellectual Property espionage (Detica, 2011), since so little is known about losses and about whether external cyber-attacks or (as we suspect) internal corruption are the primary cause of those we do know about. Therefore we have not put any figure on that at all, which does not mean it is not important. We would prefer simply to agree that the risk of cyber-pirating of intellectual property from research-intensive industries is a serious problem that merits a lot of defensive effort, without plucking an unverifiable (and unfalsifiable) cost number from the air.

We distinguish carefully between traditional crimes that are now 'cyber' because they are conducted online (such as tax and welfare fraud); transitional crimes whose modus operandi has changed substantially as a result of the move online (such as credit card fraud); new crimes that owe their existence to the Internet (such as phishing); and what we might call platform crimes such as the provision of botnets which facilitate other crimes rather than being used to extract money from victims directly.

As far as direct costs are concerned, traditional offences such as tax and welfare fraud cost the typical citizen in the low hundreds of pounds/Euros/dollars a year; transitional frauds cost a few pounds/Euros/dollars; while the 'new' cybercrimes such as phishing cost in the tens of pence/cents. In some cases, low production and distribution costs to criminals mean that direct social losses are roughly similar to criminal profits. For instance, UK consumers provided roughly \$400,000 to the top counterfeit pharmaceutical programs in 2010 and perhaps as much as \$1.2M per-month overall. UK-originated criminal revenue is no more than \$14m a year, and global revenue, \$288m. The five top software counterfeiting organisations have an annual turnover of around \$22m worldwide.

However, the indirect costs and defence costs are much higher for transitional and new crimes. For the former they may be roughly comparable to what the criminals earn, while for the latter they may be an order of magnitude higher. As a striking example, the

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<sup>31</sup> *The Nature, Extent and Economic Impact of Fraud in the UK*. London: Association of Chief Police Officers. Levi, M., Burrows, J., Fleming, M. and Hopkins, M. (with the assistance of Matthews, K.). <http://www.cardiff.ac.uk/socsi/resources/ACPO%20final%20nature%20extent%20and%20economic%20impact%20of%20fraud.pdf>.

botnet behind a third of the spam sent in 2010 earned its owners around US\$2.7m, while worldwide expenditures on spam prevention probably exceeded a billion dollars.

**Table 5: Estimates on Cybercrime**

Type of cybercrime	UK estimate in million US dollars	Global estimate in million US dollars	Reference period	Criminal revenue	Direct losses	Indirect losses	Defense cost
<b>Cost of genuine cybercrime</b>							
Online banking fraud							
- phishing	16	320	2007	x <sup>?</sup>	x <sup>?</sup>		
- malware (consumer)	4	70	2010	x <sup>i</sup>	x <sup>i</sup>		
- malware (business)	6	300		x <sup>i</sup>	x <sup>i</sup>		
- bank technology countermeasures	50	1 000	2010				x <sup>?</sup>
Fake antivirus	5	97	2008-10	x	x		
Copyright-infringing software	1	22	2010	x			
Copyright-infringing music etc	7	150	2011	x <sup>i</sup>			
Patent infringing pharma	14	288	2010	x			
Stranded traveler scam	1	10	2011	x <sup>i</sup>			
Fake escrow scam	10	200	2011	x <sup>i</sup>			
Advance-fee fraud	50	1 000	2011	x <sup>i</sup>			
<b>Cost of transitional cybercrime</b>							
Online payment card fraud	210	4 200	2010				(x)
Offline payment card fraud							
- domestic	106	2 100	2010				x <sup>i</sup>
- international	147	2 940	2010				x <sup>i</sup>
- bank/merchant defense costs	120	2 400	2010				x <sup>i</sup>
Indirect cost of payment fraud							
- loss of confidence (consumers)	700	10 000	2010			x <sup>?</sup>	x
- loss of confidence (merchants)	1 600	20 000	2009			x <sup>?</sup>	x
PABX fraud	185	4 960	2011	x			x <sup>i</sup>
<b>Cost of cybercriminal infrastructure</b>							
Expenditure on antivirus	170	3400	2012			x	
Cost to industry of patching	50	1000	2010			x <sup>?</sup>	
ISP clean-up expenditures	2	40	2010		x <sup>?</sup>		
Cost to users of clean-up	500	10 000	2012		x <sup>?</sup>		
Defense costs of firms generally	500	10 000	2010			x <sup>?</sup>	
Expenditures on law enforcement	15	400	2010			x	
<b>Cost of traditional crimes becoming 'cyber'</b>							
Welfare fraud	1 900	20 000	2011	x	(x)		
Tax fraud	12 000	125 000	2011	x <sup>?</sup>	(x)		
Tax filing fraud		5 200	2010	x	(x)		

### A.3. Summary and Policy Implications

Cybercrime costs are even harder to measure than fraud because we need to know both costs & *how* the crimes were committed. Corporate IP cyber-attacks plainly can be critical to business but no good general figures exist or are discoverable yet. We need to avoid the trap of ever-rising costs to gain media attention, especially if data have little credibility within the industry. We have a better idea of eCrimes against banks & customers - which are growing - though banks are getting much better at frustrating attempts. Criminals have access to more compromised data than they know how to use – if this changes, then costs could escalate strongly.

There are policy implications that flow from this, though this costs exercise is only intermittently taking us into policy analysis. Such defence expenditure is not necessarily irrational, but where crime is concentrated among a relatively small number of offenders, it makes sense to use criminal justice mechanisms to incapacitate the offenders. For example, the number of phishing websites, of distinct attackers and of different types of malware is persistently over-reported, leading some police forces to believe that the problem is too large and diffuse for them to tackle, when in fact a small number of gangs lie behind many incidents and a police response against them could be

far more effective than telling the public to fit anti-phishing toolbars or to purchase antivirus software (though this might also be desirable). This is part of a much wider problem of attributing risks to patterns of offending. The legal-political problem is often how to take criminal justice action when suspects have been identified in a jurisdiction beyond ready reach<sup>32</sup>! Victimisation survey data suggest that cybercrime is now the typical volume property crime in the UK – perhaps even in the EU generally – and responses to it need to be mainstreamed. This analysis of the costs is only a solid beginning in hotly disputed areas of which much is *terra incognita*. It is up to others to build upon these foundations: like the work of early cartographers, we may find that our map requires a lot more survey work. So is cybercrime a threat, and to whom? It is a threat to all of us. The question is how much of a threat, and how can we better understand how much of a threat it is.

Independent of actual levels of fraud, there is high general public anxiety about eCrimes. These anxieties require 'reassurance policing' that contains both real responses to experienced crimes and a range of public and third party measures to guide sound as well as just profitable risk-reduction practices. Forensic demands on police from eCrimes are very heavy and very expensive. Most eCrimes will never be investigatable reactively after the fact, but there is a need for shift in resource from other police functions to cyber – but if this was agreed to be needed, how might it be achieved politically?

There is very little systematic information about what people want and expect from *any* of the preventative or criminal justice sectors (ISPs, police, government generally). Some ISPs work on very slender profit margins and the market is very price-sensitive, so placing eCrime prevention (e.g. Phishing site take-down) obligations on them might have a drastic impact on supply unless burdens were equally shared so that prices to consumers rose fairly. The 'Polluter pays' principle is not easy to apply, since many fraud and hacking attempts lie outside profitable legitimate service mechanisms.

The suspension of domain names by those who allocate them (each European country has its own allocator) is one way forward, with a graduated approach based on the egregiousness and clarity of harm, and the urgency of the prevention. In responding to cybercrimes, we need first to ensure that when we supply government or private services online, we risk-assess those vigorously and monitor closely to minimise criminal exploitation. Then we need to develop interest groups for prevention depending on the form of the cyber. The UK government has recently introduced or formalised cooperation between defence intelligence (GCHQ) and major corporates to deal with IP theft and other major economic threats. Below that, the centralised expert police provide a good service for a small number of cases. It is below that that an inter-industry cooperation approach needs to be encouraged, with data and experience-sharing subject to data protection laws (which vary throughout Europe). Individuals and small businesses need to install and update anti-virus and anti-phishing – which are available free or at a cost – and have somewhere to turn by phone as well as by email/chat if they encounter problems. They need to be motivated enough to take precautions, but not so afraid they cannot participate in core activities of contemporary society.

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<sup>32</sup> We do not know the extent to which they may be generalizable within the EU, but UK public and private sector expectations are explored further in Levi, M. and Williams, M. (2012) *eCrime Reduction Partnership Mapping Study*, <http://www.cardiff.ac.uk/socsi/resources/Levi%20Williams%20eCrime%20Reduction%20Partnership%20Mapping%20Study.pdf>

## ANNEX B: RESEARCH DESIGN AND METHODOLOGY

Across the international policy and practice communities, increasing concern has been expressed about the reach and impacts of the activities of organised crime groups. There remains however a lack of robust, independent evidence about the prevalence, nature and purpose of the activities and how to calibrate them. This notwithstanding, it has resulted in a rapid growth in published material relevant to the scope of this project.

Acknowledging the presence of these uncertainties and complexities is important in determining the methodology of the project. There is a significant international literature to be reviewed which has been growing in terms of its conceptual and empirical sophistication in recent years. Such considerations are reflected in the research design for the project, which pivots around three key phases:

1. *Constructing an analytic framework for bringing together data on the costs of organised crime in a systematic and structured way.*
2. *Structured review and analysis of the available research, policy and 'grey' literatures on serious organised crime and attempts to calibrate its impacts.*
3. *Bringing this together into a report for the European Parliament as per the tender.*

### B.1. Phase One

Construction of an innovative analytic framework that will afford a systematic and structured picture of the various types of costs associated with organised crime.

Informed by the kinds of insights outlined in the preceding sections, the analytic framework draws distinctions between:

- Predatory and market based organised crimes;
- Direct and indirect costs;
- Private, parochial and public costs;
- 'Upstream' and 'downstream' control/response costs.

The development of this emergent framework enabled us to craft a rigorous yet nuanced approach to building up a picture of the different kinds of costs induced by organised crime, taking account of data availability and quality. In effect, this would provide a way of progressively widening the scope of what is included in the count of costs.

### B.2. Phase Two

The second phase of the research involved analysis of the assembled literature and its relationship with the analytical framework. The team members' ongoing involvement in research in the areas of fraud, corruption, drug markets, organised crime and terrorism means they have a familiarity with some of the key sources of published research to be reviewed. This familiarity informed the search strategy based upon the 'concept mapping' approach (Rowley and Slack, 2004). Conducting a literature review using this strategy is based upon researchers setting out the key concepts relevant to the issue being assessed, and then deploying these to organise the search for relevant articles and reports. As materials are identified, then further search terms are derived. We adopted an initially fairly wide-ranging approach, reflecting the fact that relevant materials are

likely to be located in a variety of disciplinary literatures including International Relations, Psychology, Criminology, Economics; and Law amongst others.

Mapping out key concepts in this way provides the basis for a systematic search and retrieval exercise using the extensive online research literature databases provided via Cardiff University's Information and Library Services. These assets allow for keyword and nominal searches across all relevant academic disciplines, with search strings based upon Boolean Operators with proximity, truncation and wildcard options available. Thus by identifying appropriate keywords it was possible to identify a list of available research material relating to the particular issues that are the focus of the proposed review.

The following databases and websites provided the basis for the initial search exercise to identify and source possible relevant materials, which were then supplemented by others:

- PsycInfo; Campbell Collaboration; Home Office website; International Bibliography of the Social Sciences; JSTOR; LexisNexis; National Criminal Justice Reference Services Abstracts; National Institute of Justice; Oxford Scholarship Online (Political Science); Science Direct; Sociological Abstracts; Westlaw UK.

In addition, we examined a range of commercial material (business crime/fraud/corruption/cybercrime surveys). Once a list of all possibly relevant sources was compiled this was refined through a process of critical appraisal. Cardiff University maintains online subscriptions to all the major publishers and journals worldwide enabling rapid access to source material.

In using literature reviews to inform policy and practice development, an important issue is how the materials derived from the search procedures are categorized to render any findings useable. A preliminary framework has been constructed to aid this organization and at an early stage of the research to determine the quantity and quality of materials available across the range of areas relevant to the wider inspection.

### **B.3. Phase Three**

The third phase of the study involved its application to configure the available published data on organised crime costs for the key different forms of such crime. The analysis drew together cost data identified through the review process and used these to populate the framework, accounting for the relative validity and reliability of these materials. This synthetic account provided a systematic and structured overview of the costs of organised crime. Included within this phase of activity, we conducted a 'gap analysis' to identify those areas where no reliable data has been identified by the literature review procedures.

### **B.4. Cost of Crime Methodologies**

The methodologies used to estimate the scale and social and economic costs are independent of each other and draw on different data sources.

**Estimates of market size** are produced to provide a sense of the scale of known activity across organised crime types and reflect the revenues earned by organised criminals from activity in each market. In general, this estimation is based on the average value of the good in question multiplied by the annual volume of such offences.

For example, in the case of vehicle theft the number of vehicles stolen by organised crime groups might be multiplied by the average value of the vehicles stolen.

**The social and economic cost estimates** monetise, where possible, the full range of harms to victims and society resulting from the estimated extent of each crime type. Estimates might broadly follow and develop existing Home Office methodology for estimating the costs of crime (Brand and Price, 2000; Dubourg et al., 2005; Dubourg and Prichard, 2008). This includes the costs in anticipation of crime (such as security expenditure), costs as a consequence of crime (such as property stolen and emotional and physical impacts), and costs in response to crime (costs to the criminal justice system). We find that this distinction is somewhat static, because some security expenditures are in response to crime. Moreover, there are dimensions of public anxiety that might be counted as harms, even where the fears are based on incorrect information about the nature of threats. At least in outline, we introduce different categories of costs: direct/indirect or possibly private, parochial and public;<sup>33</sup> thus health costs of drug rehabilitation would be a secondary public cost.

The scope of costs considered should capture any harms occurring within the EU, regardless of the nationality or residency status of victims. The benefits to offenders (including voluntary consumers of illicit substances) arising from organised crime are not included in this study.

Many assumptions have to be made to enable production of estimates, for example about the proportion of a particular criminal activity that is accounted for by organised criminals, or about the prices paid for particular criminal activities. Such assumptions are (or should be) intelligence led, based on critical analysis of how markets operate, including (but not simply reflecting) the knowledge of law enforcement partners and others who tackle organised crime on a day-to-day basis. If these assumptions are altered, the size of the estimates produced change. Such estimates should be treated with caution and tested, where possible, against data (for example on price and volume of drugs, and on migration statistics and on the relationship between crimes and migration).<sup>34</sup> For some types of crime, we anticipated presenting *ranges* of cost, which are more faithful to reality than a single figure. In practice, however, data were so poor and intermittent that we have simply presented a minimum cost or no economic cost at all.

The economic literature generally proposes that we use a "shadow market" - broadly analogous to a market that exists - to evaluate the costs associated with a transaction for which no market exists (Roman and Farrell, 2002). The two methods for evaluating the cost associated with crime are:

- (1) Willingness to pay estimates, which are based on the price one would be willing to pay to avoid damages, such as death or disability, that result from crime. Methods of estimating willingness to pay include: required compensation, which estimates the price that an individual would have to receive to risk exposure to a dangerous event; property value, where differences in crime rates and property values are compared to estimate

<sup>33</sup> The difference between private, parochial and public costs is that parochial costs are shared by members of a network who know each other in the community, like victims of some pyramid schemes or toxic waste dumps.

<sup>34</sup> Consider for example perhaps the most studied organized crime activity in the world, the US drug markets. Successive estimates of the scale of the markets for cocaine and heroin by the same research group using the same methodology have seen very substantial changes in estimates. See e.g. ONDCP (2000 and 2001).

the amount individuals will pay to avoid crime and its costs; and, quality of life, which estimates costs according to degrees of disability;

(2) Victim compensation or willingness to accept, the converse of willingness to pay. This is the aggregated amount that would have to be paid to a victim to compensate for his or her tangible and intangible costs. Methods of estimating willingness to accept include: jury compensation, which values victim costs at the rate American juries (or – transferred to the EU setting – judges) compensate victims of crime, including health care, lost productivity and intangible costs such as pain and suffering; discounted future earnings estimates, which are based solely on the costs (or avoided costs) of lost productivity due to an incident;<sup>35</sup> and cost of illness, which uses survey data to aggregate the tangible cost of crime, including health and productivity.

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<sup>35</sup> These discounted future earnings are high for professionals and MEPs; they are low for unemployed Europeans with poor future prospects. The lost future *criminal* earnings of injured or killed organised criminals are not considered. Excluding kidnap targets and some senior private and public officials, most organised crime homicide victims have a low 'value' in these strict terms because they typically come from lower social groups and have poor future income prospects. If we take the view that if some people who use drugs heavily would be addicted to other substances if they did not use drugs, then their future income prospects likewise are poor.

## **ANNEX C: THE IMPACT OF TRAFFICKING – SOME STUDIES**

Oran et al. (2012) conducted a systematic review on the prevalence or risk of violence while trafficked and/or on the prevalence or risk of any measure of physical, mental, or sexual health among trafficked people. The search identified 19 eligible studies worldwide, all of which reported on trafficked women and girls only and focused primarily on trafficking for sexual exploitation. The review suggests a high prevalence of violence and of mental distress among women and girls trafficked for sexual exploitation. The random effects pooled prevalence of diagnosed HIV was 31.9% in studies of women accessing post-trafficking support in India and Nepal, but there was very large variation. Infection prevalence may be related as much to prevalence rates in women's areas of origin or exploitation as to the characteristics of their experience. Findings are limited by the methodological weaknesses of primary studies and their poor comparability and generalisability. The authors concluded that existing evidence suggests that trafficking for sexual exploitation is associated with violence and a range of serious health problems. They argued that further research is needed on the health of trafficked men, individuals trafficked for other forms of exploitation, and effective health intervention approaches.

In a study of post-return Moldovan trafficking victims – almost all for sex work - Abas et al. (2012) found that at an average of 6 months post-return, 54% met criteria for any illness set out in the Diagnostic and Statistical Manual of Mental Disorders: 35.8% of women had Post-Traumatic Stress Disorder (PTSD, alone or co-morbid), 12.5% had depression without PTSD and 5.8% had another anxiety disorder. The extent to which some of this damage might have been present anyway was not examined. Finally, Turner-Moss et al (2013) analysed data from a case series of anonymised case records of a consecutive sample of 35 men and women who had been trafficked for labour exploitation in the UK and who were receiving support from an NGO 2009-10. Over three-quarters were male and two-thirds aged between 18 and 35 years. Forty percent reported experiencing physical violence while they were trafficked. Eighty-one percent reported one or more physical health symptoms. Fifty-seven percent reported one or more post-traumatic stress symptoms.

## ANNEX D: NATIONAL VAT FRAUD

Levels of VAT fraud in all MS are unavailable. We here present data on levels in two countries representing different features of the EU membership. It should be emphasised that not all VAT fraud is planned in advance by organised crime groups as popularly understood. Levi (2008) developed a simple typology of fraud into pre-planned; intermediate (started honest and consciously turned to fraud later, sometimes via corruption by organised crime groups); and slippery-slope (carried on trading whilst insolvent). An unknown percentage of the first two categories fit the criteria for organised crime, though all of them are 'organised'. However, once they know how to go about such frauds, they are relatively simple to commit, and therefore are very attractive to organised crime groups.

The Bulgarian SOCTA 2012<sup>36</sup> estimated that VAT fraud related to organized crime cost €350 million for 2010 – in such cases, costs are the same as benefits to criminals, with only modest deductions for business expenses and bribes. VAT fraud significantly affects the competitiveness of legitimate companies that pay their taxes, so (as in cartels) an indirect cost of fraud is to crowd them out of the market, though we are unable to place a sensible cost estimate on this. The participants in fraud schemes have high social status and potential for influence over society, since many also operate in the legal economy: a feature of Bulgarian organised crime that has been less noted elsewhere in the EU, other than in parts of Italy. After a peak in 2008, the size of VAT fraud dropped by 30%, which can be explained by the impact of the economic crisis, but also by the intensified pressure by the National Revenue Agency (NRA), the Ministry of Interior and the State Agency for National Security (SANS). However, the levels of losses incurred remain high and reach 10-11% of the VAT revenues. A good indication of the scale of this problem is the fact that, according to the NRA, nearly 20% (or about 30,000) of all active VAT-registered companies in the country are involved in different forms of VAT fraud. Bulgaria's EU accession was followed by a significant growth in international fraud schemes: international VAT fraud more than doubled in importance – from 8% of all losses caused by VAT fraud in 2006 to 19% in 2009. These changes (and those in the UK and elsewhere) illustrate the danger of 'freezing' costs of organised crime without updating them. This is because control measures (such as delayed repayment of VAT and the range of measures implemented in the EU post-2013) can have a more dramatic effect than they can in other areas such as drugs that are less amenable to situational prevention.

In the UK, the Exchequer Secretary estimated that at its peak in 2006 £3–£4 billion was lost to MTIC fraud; but the most up-to-date figure was now £0.5–£1 billion a year.<sup>37</sup> Indeed, at its peak, the Treasury was suggesting that the losses could be infinite if not stopped, since with fake invoicing and fake goods, there was nothing to stop the fraudsters.<sup>38</sup> Hence, the special permission from the EU to introduce reverse charging on a range of products then favoured by MTIC fraudsters. As with the Bulgarian case, this emphasises the dynamics of organised crime fraud costs, depending on their controllability and also on their being measured. The latter point is important because the UK Balance of Payments data were being distorted by the initially unaccounted for losses.

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<sup>36</sup> *Serious and Organised Crime Threat Assessment, 2010-11*, p.7, Sofia: Center for the Study of Democracy.

<sup>37</sup> In evidence to the House of Lords EU Committee, 2012. For excellent reviews of the technical issues, see Smith (2007); Keen and Smith (2006).

<sup>38</sup> See the discussions in Levi et al. (2007).

## ANNEX E: PRIVATE SECTOR FRAUD SURVEYS IN THE EU

There are periodic corporate surveys in the EU of economic crimes of various kinds. In recent years, unfortunately for the purpose of this exercise, these have moved away from measures of cost and examine attitudes to different kinds of security, to corruption and cybercrime, etcetera. The forthcoming EC-funded *Crime against businesses in Europe – A pilot survey* did not consider direct costs, as also was the case with the parallel EC-funded survey of crimes against individuals in the EU, which like most crime surveys, focussed on prevalence and incidence but not cost or other impacts.

- The global Kroll survey 2012-13<sup>39</sup> found that of the 200+ European companies surveyed, two thirds were affected by fraud, and the average percentage of revenue lost to fraud was 0.7%. However no data are provided on what that corporate turnover was, nor on the sorts of companies who responded. Information theft, loss or attack affected 30% of firms; internal financial fraud or theft, 25%; and – a difficult to quantify category in terms of harm - regulatory or compliance breach, 16%. However, the level of losses in these sub-categories is not given. It is frankly astonishing that only a third of companies self-reported that they had not experienced fraud that year: this may reflect low awareness or a different conception of the question being asked, as it is difficult to imagine many companies having no fraud at all.
- The Ernst & Young 2011 survey<sup>40</sup> found that 16% of respondents globally reported that their company has experienced a (subjectively) *significant* instance of fraud in the past two years. In Western Europe, where more than a quarter of the survey respondents were based, this number increased from 10% to 21%; in Central and Eastern Europe (unfortunately broader than the EU 28), 14% had been victims.
- PwC conducts an economic crime survey biennially, but the last time that general regional data were available was in their thoughtful study of 2007,<sup>41</sup> when 38% of companies in Western Europe compared with 50% in Central and Eastern Europe reported a significant fraud in the past two years. Although there was no question about who they thought had perpetrated it, the kinds of frauds asked about – such as accounting fraud and asset misappropriation – were not likely candidates for organised crime in the sense used in this report. The data are not broken down regionally, but the following table gives us an idea of the range, if not the order of magnitude, of impacts:

**Table 6: What Fraud Costs**

Direct losses (on average)	US\$ 3,242,095
+ Management costs (on average)	US\$ 550,356
+ Damage to the brand	88% cases
+ Damage to staff morale	88% cases
+ Damage to external business relations	84% cases
+ Costs of dealing with the regulator	84% cases
+ Damage to relations within the regulator	80% cases
+ Damage to share value	9% cases

<sup>39</sup> Kroll Advisory Solutions (2013) *Global Fraud Report, Annual Edition 2012-13*

<sup>40</sup> *11th Global Fraud Survey* (London: Ernst & Young).

<sup>41</sup> PwC (2007) *Economic Crime: People, Culture and Controls* (London: PwC); Bussman, K. and Werle, M. (2006) 'Addressing crime in companies', *British Journal of Criminology*, 46: 1128-1144.

## ANNEX F: COSTS OF FRAUD IN THE UK

Table 7: Breakdown of losses by victim, United Kingdom (NFA, 2013)

Fraud loss by victim sector	Victim	Total estimated fraud loss	Fraud type	Fraud loss	Identified loss	Hidden loss
Public Sector £20.6 billion	Tax system	£14.0 billion	Tax fraud	£14.0 billion	£14 billion	
			Vehicle excise fraud	£40 million	£40 million	Unknown
	Central government	£2.6 billion	Procurement fraud	£1.4 billion	£1.4 billion	
			Grant fraud	£504 million	£504 million	
			Television licence fee evasion	£204 million	£204 million	
			Payroll fraud	£181 million	£181 million	Unknown
			NHS patient charges fraud	£156 million	£156 million	Unknown
			NHS dental charge fraud	£73 million	£73 million	Unknown
			Student finance fraud	£31 million	£31 million	Unknown
			Pension fraud	£14 million	£14 million	Unknown
			National Savings and Investments fraud	£0.40 million	£0.40 million	Unknown
			Housing tenancy fraud	£845 million	£845 million	
	Local government	£2.1 billion	Procurement fraud	£876 million	£876 million	
			Payroll fraud	£154 million	£154 million	Unknown
			Council tax fraud	£133 million	£133 million	
			Blue Badge Scheme misuse	£46 million	£46 million	Unknown
			Grant fraud	£35 million	£35 million	
			Pension fraud	£7.1 million	£7.1 million	Unknown
			Benefit fraud	£1.2 billion	£1.2 billion	
	Benefit and tax credits systems	£1.9 billion	Tax Credits fraud	£670 million	£670 million	

\*Black, red, amber, green (BRAG) Assessment: Confidence in Indicator

BRAG	Level of confidence
Black	Poor
Red	Average
Amber	Good
Green	Excellent

Note:

Perceived level of confidence is based upon management assumptions and judgement to provide an illustrative indication of the quality of data available to produce an estimate.

NB It is not always possible to demarcate clearly the fraud by type estimates to identified or hidden losses as some estimates spread across both. Further, it should be noted that fraud cited as being 'unknown' does not mean that no fraud exists, but rather that no fraud has been identified, measured or is estimable. Not all fraud types are included in the

Fraud loss by victim sector	Victim	Total estimated fraud loss	Fraud type	Fraud loss	Identified loss	Hidden loss
Private Sector £21.2 billion	Small, medium and large enterprises in the UK	£15.9 billion	Small enterprises	£7.7 billion	£4.6 billion	£3.1 billion
			Medium enterprises	£1.5 billion	£44 million	£1.4 billion
			Large enterprises	£6.7 billion	£555 million	£6.1 billion
	Financial and insurance activities	£5.4 billion	Insurance fraud	£2.1 billion	£39 million	£2.1 billion
			Mortgage fraud	£1 billion	£1 billion	
			Plastic card fraud	£388 million	£388 million	Unknown
			Online banking fraud	£40 million	£40 million	Unknown
			Cheque fraud	£35 million	£35 million	Unknown
			Telephone banking fraud	£13 million	£13 million	Unknown
			Estimated other	£1.8 billion	Unknown	£1.8 billion
Charities £147 million	Registered charities in Great Britain	£147 million	Income £0 – £100,000	£5.2 million	£1 million	£4 million
			Income £100,001 – £500,000	£16.3 million	£11 million	£5 million
			Income £500,001 – £5 million	£23.0 million	£14 million	£9 million
			Income over £5 million	£102.8 million	£4 million	£99 million
Individuals £9.1 billion	UK adult population	£9.1 billion	Mass marketing fraud	£3.5 billion	£3.5 billion	Unknown
			Identity fraud	£3.3 billion	£3.3 billion	Unknown
			Online ticket fraud	£1.5 billion	£1.5 billion	Unknown
			Private rental Property fraud	£755 million	£755 million	Unknown
			Pre-payment meter scams	£2.7 million	£2.7 million	Unknown
Other £919 million	Other/mixed	£919 million	Housing tenancy fraud (housing associations)	£919 million	£919 million	

**Table 8: Commercial Victimization Survey England and Wales 2012, proportion of incidents respondents thought were carried out by an organised group of criminals across manufacturing, wholesale and retail, transportation and storage and accommodation and food industry sectors**

Percentages					2012 CVS
	All four sectors				
	Organised group of criminals	A loosely knit group	Someone working alone	Don't know	Unweighted base
<b>All burglary (inc. attempts)</b>					
Burglary with entry	30	27	24	19	427
Attempted burglary	10	39	31	20	298
<b>Vandalism</b>	7	42	24	27	681
<b>All vehicle-related theft</b>					
Theft of vehicles	47	16	15	22	51
Theft from vehicles	26	28	19	28	241
<b>All robbery (inc. attempts)</b>	19	27	48	6	114
<b>Assaults and threats</b>	3	16	74	7	491
<b>All theft</b>					
Thefts by customers	8	20	63	9	408
Thefts by employees	0	7	87	7	259
Thefts by others	16	21	44	18	105
Thefts by unknown persons	n/a	n/a	n/a	n/a	n/a
<b>All fraud</b>					
Fraud by employees	0	9	70	21	93
Fraud by others	23	14	48	16	223
Fraud by unknown persons	n/a	n/a	n/a	n/a	n/a
<b>Online fraud</b>	25	2	5	68	181

## **ANNEX G: INTELLECTUAL PROPERTY CRIMES**

### **G.1. Defining 'Counterfeit'**

To estimate the costs of counterfeiting and piracy, we must first clarify the language used to describe them. The term 'counterfeit' has two common usages (Spink, 2011). The first is a macro usage which indicates that a product is deceptive; the product is not what it is being sold as, such as adulterated pharmaceuticals or generic alcohol traded in branded packaging and sold as if they were the legitimate specimens. The second is a micro term which reflects a violation of IP rights and indicates that an item has been copied using verisimilar or identical technology by an actor who does not hold the rights to the relevant IP.

Likewise, the term 'pirated good' holds two meanings. First, a pirated good may refer to an unauthorized copied item, either digital or physical, whether or not it is sold. Second, a pirated good may refer to a legitimate good that is smuggled, in order to avoid paying a duty. This latter usage is employed in reports on IP theft that include piracy (BASCAP, 2009, 2013; European Commission, 2011, 2012; Frontier Economics, 2011). Such items should not be described as counterfeit items and their illicit trade is dealt with in sections 8 and 9 of this report.

The literature canvasses three general categories of counterfeiting and piracy, identified here as: digital piracy (the unauthorized copying of entertainment products), trade IP theft (the stealing of IP required to execute a process or construct a product), and physical counterfeiting and piracy.

The literature also classifies counterfeit and pirated products (and to, an extent, the consumers who buy them) into three general categories (Yang, Sonmez, Bosworth, & Fryxell, 2009). First, there are products designed to deceive the consumer into believing that the product is authentic and traded legitimately. Such products attempt to exactly substitute the original conditions of sale. Second, there are products which do not deceive. These products are sold openly as counterfeited or pirated goods at a fraction of the cost of the originals. Vendor and consumer are mutually aware of their inauthenticity. Finally, there is the 'mixed' category product which may be designed to deceive casual consumers but is neither produced to a standard to directly substitute for, or is priced commensurate with an authentic, legitimate item.

### **G.2. Considering the Impact of Enforcing IP Rights**

The enforcement of IP rights may create collateral consequences, which in themselves create social costs. Joseph Stiglitz (2007) contests the industries' view that IP rights ought to be strong in order to encourage innovations (see also Sell, 2010). Stiglitz (2007, p. 1694) argues that certain measures such as TRIPS<sup>42</sup> have successfully restricted 'access to generic medicines, putting these drugs out of the financial reach of most in the developing countries'. The resulting market gap is filled with adulterated, ineffective, or dangerous products (Liang, 2006; Mackey & Liang, 2011) which can thus create costs associated with the public health threats. This review is not the place to deal with major conceptual debates about IP harms, but a minimalist position would be that given that a fundamental characteristic in defining the threat of a

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<sup>42</sup> Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement

counterfeit or pirated item in causing a loss for the original manufacturer is whether or not the unauthorized product substitutes the authorized one in the market (European Commission, 2011), IP rights clearly ought to be asserted when a counterfeit or pirated product threatens to become an exact substitute for the original product.

### G.3. Digital Piracy

In order to address the costs of digital piracy, a framework designed to account for several simultaneous factors must be used. In existing reports, the concept of product substitution addressed and used to estimate industry losses (Elliott & Parton, 2012; TERA, 2010). Moreover, the literature recognizes that in markets where average consumers cannot afford the original items, the likelihood of piracy is higher (BASCAP, 2009; Treverton et al., 2009). Many reports intimate that the losses to the creative industries (namely music, movies, and television) are solely attributable to piracy and they inadequately explore the effects of changes in the market, along with changes in consumer habits and different retailing configurations. Existing reports fail to consider that the piracy threat of bootleg copies sold on the street has been greatly reduced, particularly in places where internet is widely accessible and the ability to download entertainment products on one's own has become easier.

Undoubtedly, the music market has changed in the past decade. Today, users generally prefer to purchase single tracks rather than full albums. One online retailer that uses a non-traditional vending model highlights that on its website albums outsell tracks 5 to 1 compared to tracks outselling albums 16 to 1 in the rest of the digital music buying world (Bandcamp, 2013). The most recent Nielsen/Billboard Music Industry report confirms this disparity, indicating transactions are, in fact, at an all-time high with users preferring tracks to albums (Business Wire, 2013). In addition, Nielsen/Billboard indicates that music sales may be impacted by the increased availability of legal streaming services (Christman, 2013).

Attempts to protect IP using DRM have been largely rejected by consumers who demand the ability to use products purchased amongst a plurality of their devices. Or, as demonstrated in the launch of Xbox One, the consumers rejected the proposed inability to trade physical copies of second-hand games (Stuart, 2013).

The data is non-existent with regards to the illicit distribution of books, though a Munich court shut down the site library.nu which archived over 400,000 books (Kelty, 2012). In spite of that action, the publishing house Springer notes that, while piracy is a serious topic, they 'have not yet seen harmful effects of eBook piracy and file sharing on [their] eBook portfolio' (Springer, 2013).

Regarding software, Yang *et. al.* (2009, p. 269) note that the instances of software piracy are higher than 'piracy in most other industries because the nature of software products enables both massive reproductions for profit and individual and organisational copying at a click of the fingertip'. Although the number of instances that software is pirated may be estimated based upon the number of requested updates compared to known sales (The Commission on the Theft of American Intellectual Property, 2013), such a number does not provide an accurate picture of the likelihood that legitimate copies are substituted by pirated software. As is the case with other digital media, a driving factor for software piracy is the inability to pay for the original, as is often the case in developing economies. A collateral cost that occurs with some software piracy is the threat that attached virus and Trojan programs pose to the machine and/or network

where the software is installed. Such programs can facilitate other cybercrimes, including identity theft, cyber terrorism, and trade IP theft.

Industry reports which focus on how piracy threatens jobs in physical storefronts (TERA, 2010) fail to consider the impact that online retailers such as Amazon and EBay have on high-street businesses. Notably, when the HMV music and film chain went into administration in the UK in January 2013, the chain's failure to compete with online retailers rather than the impact of piracy was cited (BBC, 2013). The impact of online retailers, namely Amazon, is not incidental in the decline of high-street point of sale (Tompkins, 2013). It may be argued that as online retailers replace storefront retailers, the jobs lost are not being reallocated by the market efficiently.

Although we exclude generally in this review the benefits from crime, another contested aspect of IP theft harms arises from pirated goods stimulating the market for ideas by free provision of books (Stiglitz, 2007). Underground music artists, particularly in the electronic music scene, have also leaked their albums out on P2P sharing platforms and blogs in order to generate interest and increase audience awareness, which may lead to greater attendance at live performances. In neither of these sorts of case was income from IP goods crucial to the earnings of the creators.

Finally, we wish to consider the enforcement costs of digital piracy. Digital IP rights are not consistently recognized throughout the EU. A notable example is the Netherlands where downloading digital media is not a crime so long as it is for private use (Roxborough, 2012). Moreover, a fundamental discrepancy in the definition of an IP violation exists throughout the EU as well. Accordingly, given the discrepancies in how the crime is defined and counted, an accurate estimate of the impacts of counterfeiting and piracy and the costs related to enforcement of digital IP rights is dependent on a country by country analysis (Frontier Economics, 2011). Neither the private nor public sector costs of IP protection are readily available, and this report does not attempt a cost-benefit analysis of defence costs. Whether motivated by ideology or by economic interests, or a combination, substantial effort is put into counter-measures from both IP attackers and defenders. Attempts to block popular bit-torrent websites, such as the Pirate Bay, in the UK may have discouraged some users; nonetheless, such websites remain accessible via mirror sites. Given the current procedures in place, it is unlikely that the UK government could successfully block mirror sites since they are set up in anticipation of the blocking or shutdown of the principal sites, thus creating a pattern of diminishing returns to the cost-effectiveness of current efforts. An unintended effect of the successful prosecution of casual downloaders could result in the return of piracy rings that sell pirated copies of digital products on the street. As the industry notes, these types of rings are run by individuals who use the proceeds to fund organized criminal groups that intend to commit other organized criminal acts (Trevorton et al., 2009).

Before any estimate of the costs of digital piracy can be made, it is necessary to undertake a data gathering study that, at a minimum, controls for factors such as changes in consumer preferences and online retailers, while also considering potential gains obtained via unauthorized copying.

#### **G.4. Trade IP theft**

Trade IP theft is a direct threat to a company's earning capabilities, since it can result in their failure to secure patents, release products before competing firms, or maintain trade secrets. Trade IP theft typically occurs either by hacking (Symantec, 2013), the

digital compromising of the target's electronic systems, or physically taking IP materials and sharing them, as happened with Dongfan Chung and Xiang Dong 'Mike' Yu who were convicted of trade IP theft for selling trade secrets of Boeing and Ford respectively (The Commission on the Theft of American Intellectual Property, 2013). Trade IP theft can occur at any point in the supply chain, thus making security of trade IP within the supply chain paramount.

Trade IP theft is a genuine threat to government and companies. If government intelligence secrets, such as the technologies used in machines of war, are compromised, the money invested in developing products, particularly those meant to be stealth or invulnerable, is lost. Regarding private companies, if their trade secrets are compromised, this allows competitors to bypass the research and development process and potentially use or sell a competing near-substitute product before or for less cost. This results in the research and development invested into the product failing to be recouped (The Commission on the Theft of American Intellectual Property, 2013), and an entire corporate strategy to be defeated criminally. Determining the cost of such instances is difficult, given that data is only generated when trade IP theft is proven, and the BAE Detica (2011) estimate of £17 billion for commercial cyber theft of IP in the UK alone was heavily critiqued; Anderson et al. (2012) decided to exclude this area from their estimate of crime costs because there was insufficient evidence.

Nevertheless, as a result, governments and companies that have embedded 'moles', either physical or digital, may be sustaining losses or suffering other costs (such as the inefficacy of technology) over time without realizing the reasons for such losses. It is clear that potential trade IP theft warrants substantial investment in security relative to the importance of the trade IP, irrespective of the unknown risk of threat actors. Likewise, associated costs, including lost jobs due to a company's closure or lost lives due to the compromise of a civilian or military technology are impossible to calculate comprehensively beyond 'known knowns'.

## G.5. Physical Counterfeiting and Piracy

As indicated before, physical counterfeiting is only likely to affect companies producing the goods if the products serve as exact replacements and are sold in a manner whereby the consumer is unaware that the item purchased is counterfeit.

Current reports on counterfeit and pirated items measure the number of seizures that occur in a calendar year. The reports indicate significant variance from year to year in some countries but provide no explanation to as why massive swings occur. Moreover values estimated regarding such products indicates their value if they were exact replacements of the items seized, but no data are available that show how many such products seized are exact replacements, so estimation from such data is impermissible.<sup>43</sup> Nonetheless, the counterfeiting of products, specifically consumables, poses several identifiable threats and social harms, as readily recognized in China, but less so in Europe despite the horsemeat scandal.

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<sup>43</sup> In 2012, almost 90,000 detention cases were registered by EU Customs, largely small parcels in express and postal traffic, most probably as a result of internet sales (EC, 2013). The almost 40 million detained articles were valued as equivalent genuine products at just below 1 billion euro. Almost a third were cigarettes, followed by other goods (such as bottles, lamps, glue, batteries, washing powder) and packaging materials. Products for daily use (i.e. body care, medicines, toys, electrical household goods) accounted for 12,7% of the total number of detained articles.

The costs resulting from compromises in public health and safety are subject to under-identification and reporting of counterfeit goods. It is clear that customs officials are impounding more consumable items as a percentage of all items over the past three years (World Customs Organization, 2012, 2013a), though the number of articles detained by EU Customs dropped by two thirds in 2012 (European Commission, 2013). While there exist consumers who willingly buy known counterfeited ingestible items (not deceived) (Prabhakar, 2012), particularly tobacco products (World Customs Organization, 2013b), it is more likely that users are deceived with ingestible items given the reluctance of consumers to hazard personal harm due to ingesting unknown substances and the resulting efforts by counterfeiters to sell products as exact substitutes (BASCAP, 2009; Mackey & Liang, 2011). Spink (2011, p. 184) identifies three types of public health risks resulting from food fraud: direct, posing immediate risk to the consumer such as acute illness or death; indirect, posing a sustained, long term risk to the consumer such as poisoning resulting from long-term exposure to toxic elements; and, technical whereby the consumer is duped into ingesting something that is not necessarily harmful but not what it claims to be. It is *possible* that counterfeiting and piracy *may* cost G20 governments and consumers over \$US120 billion every year, with \$77.5 billion of this from tax revenue losses, \$25 billion in increased costs of crime, \$18.1 billion in the economic cost of deaths resulting from counterfeiting and \$125 million for the additional cost of health services caused by dangerous counterfeit products (Frontier Economics, 2011), but we are unable to evaluate these claims in general or re-estimate them for the EU in particular.<sup>44</sup> We are particularly sceptical of all time-invariant accounts.

Of particular concern are the costs to public health that can originate and extend past the physical borders of the EU, namely those resulting from the counterfeiting of pharmaceuticals. To be clear, in referring to counterfeit pharmaceuticals, we refer to medications that do not contain the same quantity or quality of the legal equivalent. Pharmaceuticals are attractive items to pirates given their margins to be earned on a per dose basis. Counterfeiters can accept tiny margins on each piece because they are able to move millions of pieces (Bate, 2008). Whether or not such counterfeiting is undertaken by organised crime groups committing other crimes, it seems to us obvious that the label is appropriate to them: they may be distributed via otherwise legitimate channels, however.

Though counterfeit pharmaceuticals are known to be sold widely in economies that can afford the medications the least (Bate, 2008), there is little research on the percentage of counterfeit pharmaceuticals in the developed world or, by extension, to the EU (Outtersson & Smith, 2006). An ASOP EU (2013) report estimates that sales generated in Europe by criminals who make fake/falsified medicines is greater than €1.4 bn per year, but this is not an estimate of harm anywhere, let alone to the EU. Additionally, counterfeit pharmaceuticals pose a threat to consumers when there are times of great demand due to shortages or pandemics (Liang, 2006; Liang & Mackey, 2012; Mackey & Liang, 2011). The threat that counterfeit products are used has increased with the use of online pharmacies and medical providers (Liang & Mackey, 2012). Furthermore, the risks generated from the consumption of such medications pose a possible worldwide public health threat do the resistance that bacteria can develop when treated with inferior or insufficient doses (Mackey & Liang, 2011). The resulting costs of drug development, the resulting deaths due to the inability to treat, and the costs of healthcare are not able to be estimated.

<sup>44</sup> Given corporate tax avoidance mechanisms, the tax loss estimates are particularly problematic.



## DIRECTORATE-GENERAL FOR INTERNAL POLICIES

# POLICY DEPARTMENT CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS **C**

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