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Expanding the coverage of illegal economic activities in national accounts

ILCHO BECHEV (1)

Abstract: This paper discusses a theoretical possibility of expanding the coverage of illegal economic activities (IEAs) in possible areas that go beyond the minimum recommendations adopted in a number of European countries. It also investigates the relevance and sources for statistics on additional IEAs within national accounts. The study further suggests that a broad set of IEAs under the heading of online services could be of interest in terms of their economic significance and that this area may be worthy of further investigation.

JEL codes: E01, E23, E26

Keywords: national accounts, illegal economic activities, methodology, estimation

(1) Eurostat, Unit C.5: Integrated global accounts and balance of payments.

1. Introduction

In 2014 when the European Statistical System (ESS) was preparing for the introduction of the 2010 European System of National and Regional Accounts (ESA 2010) manual, the media began to run stories with headlines such as 'Sex, Drugs and GDP'. Official statisticians were prepared for this sort of interest which was hardly proportional to the projected and later proven impact of illegal economic activities (IEAs) on economic output in Europe.

Recording the illegal economy was not a methodological change introduced by ESA 2010, rather it was a change brought about by much earlier work on international and European statistical manuals and guidelines. However, the implementation of ESA 2010 marked the point when various and often diverging national statistical practices on IEAs were harmonised. Thus, as of September 2014, all of the EU Member States were to include estimates for the three so-called core IEAs — prostitution, the sale of illegal drugs and the smuggling of alcohol and tobacco — in their national accounts.

It is now four years since these changes took place, so it may be worthwhile to take a fresh look at the decision to include these three activities in national accounts. Why were these three specific activities chosen? Those who took part in making the decision said that the debate around IEAs and their inclusion in the compilation 'created hard discussions' between compilers of European national accounts in the early 2000s (Fløttum (2007)). As an outcome, specific steps were taken and it was agreed to include IEAs in national accounts; it was decided that it would 'be sufficient to concentrate on what are likely to be most significant illegal activities; production of and trade in drugs, prostitution and smuggling of alcohol and tobacco' (Fløttum (2007)).

The practical difficulties of including other IEAs should not prevent researchers and practitioners from exploring more deeply the *theoretical possibility* of recording additional IEAs when compiling macroeconomic statistics. Therefore, the aim of this paper is to go beyond the already adopted minimum recommendations and to investigate the relevance and sources for statistics on additional IEAs within national accounts. The study further suggests that a broad set of IEAs under the heading of online services could be of interest in terms of their economic significance and that this area may be worthy of further investigation.

This paper is divided into six main chapters, each explaining the treatment of a separate IEA. The six activities covered are: illicit firearms trafficking; fencing of stolen goods; migrant smuggling; infringement of intellectual property rights, counterfeit goods and piracy; bribery; and illegal gambling (²). Before treating these in more detail, the paper briefly provides some background information relating more generally to IEAs.

⁽²⁾ Due to its complicated and cross-cutting nature the provision of money laundering services merits a separate study and is not tackled by the present paper; information on this subject is included in Eurostat (2018).

2. Background

ESA 2010 established a methodology for measuring economic activity which requires EU Member States to include part of the illegal economy (prostitution, drug trafficking and smuggling) in their calculations of gross domestic product (GDP). The definition of production given in the ESA means that only transactions entered into voluntarily should be included within the estimate of GDP, regardless of whether the transaction was legal or illegal; in other words, the transaction between client and consumer must be consensual.

Here it is important to note that according to ESA 2010 (paragraph 1.79), a transaction that has been carried out in a mutual agreement *implies* 'prior knowledge and consent' of the institutional units involved. In other words, information asymmetries are not a prerequisite to exclude a transaction from the production boundary, rather what counts is mutual agreement at the time of the transaction, no matter what level of prior knowledge was possessed by each of the parties. This is an essential assumption when considering the context of IEAs, since by default illegal transactions are prone to bear more information asymmetries than legal ones, as IEA transactions are generally irreversible in the sense that traders are not obliged to repair, replace, reduce the price or give a refund if goods bought turn out to be faulty or do not look or work as advertised.

According to the ESA 2010 recommendations, transactions related to IEAs should be included in national accounts when significant. Thus, there should only be a need to include other types of IEAs if these would have an impact — materiality threshold — of at least 0.1 % on a country's gross national income (GNI). This threshold is to be applied to the potential impact on GNI: and any complex issue should be assessed as part of a total and should not be broken down into smaller parts (Eurostat (2014)).

The institutional units involved in the three core IEAs are classified as households, in other words, there is no employer-employee relationship assumed. The gross value added (GVA) generated on domestic territory is therefore identical to mixed income for these units and all entries to be recorded between residents and non-residents in the national accounts fall within the boundary of GDP and there are no further transactions to be recorded in the transition from GDP to GNI (Eurostat (2018)).

The guidelines to the statistical recording of the three core IEAs are well-described in Eurostat (2018), Sections 3.4-3.6. It provides recommendations on the modelling approaches that might be adopted for these different types of IEA. A supply-side approach is recommended for prostitution since producers have lower incentives to hide their transactions, whereas demand-side approaches are recommended as more reliable starting points for estimating sales of illegal drugs and the smuggling of alcohol and tobacco.

Furthermore, recommendations are made for the statistical classification of these three IEAs within NACE (the statistical classification of economic activities):

- prostitution services are classified in NACE Rev. 2 Class 96.09, where escort services are part of other personal service activities;
- the trade element of illegal drug trafficking is classified to NACE Rev. 2 Class 47.73, dispensing chemist in specialised stores, stalls or markets;
 the production of cannabis plants, coca bushes or opium poppies is classified to NACE Rev. 2 Class 01.28, growing of spices, aromatic, drug and pharmaceutical crops;
 the production of illegal synthetic drugs (LSD, ecstasy, amphetamines, etc.) is classified to NACE Rev. 2 Group 21.2, the manufacture of pharmaceutical preparations;
- the trade element of smuggling is classified to NACE Rev. 2 Class 47.99, other retail sale not in stores, stalls or markets.

Recommended data sources for information on IEAs range from administrative information derived from police, customs or ministries (for example reports or expert opinions) to surveys conducted among consumers of IEAs, and country reports from non-profit organisations, academia or international research institutes. These sources cannot be directly incorporated into the statistical recording of IEAs, since they differ in various respects (for example, their population covered or the period covered) and so they are generally difficult to compare or combine, while some information may be available from one-off studies or sources that are not available on a regular basis. On the other hand, some information on the core IEAs is available for all countries and experts seem to have an overview of the situation.

3. Illicit firearms trafficking

The trafficking of illicit firearms is one of Europol's priority areas (³). In 2014, the EU agency for law enforcement cooperation estimated that there were almost half a million lost or stolen firearms in the EU (⁴). According to the European Commission (2013) 'the illegal firearms trade generates between EUR 125 million to EUR 236 million per year globally, which represents between 10 to 20 % of the total trade in legal firearms'. A key feature of illicit firearms trafficking is that it is mainly caused by diversions from the legal firearms trade and conflict-related stockpiles. Illegal firearms trade occurs on both large and small scales, with these firearms traded by a variety of methods (some more sophisticated than others), see Eurostat (2018), paragraph 141.

Although there is no explicit definition of illicit firearms and their trafficking in macroeconomic statistical manuals, a definition of this particular IEA could be borrowed from the United Nations (2001), as Article 3 (e) of the Firearms Protocol states:

... the import, export, acquisition, sale, delivery, movement or transfer of firearms, their parts and components, and ammunition from or across the territory of one State Party to that of another State Party if any one of the States Parties concerned does not authorize it in accordance with the terms of this Protocol or if the firearms are not marked in accordance with article 8 of this Protocol.'

⁽³⁾ See: https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/illicit-firearms-trafficking.

⁽⁴⁾ Ibid.

On this basis, an illegal firearms trafficker could be defined as 'a person who deals or trades in illegal firearms. According to Eurostat (2018), such traffickers are considered to be selfemployed (resident units or notional resident units)' (see paragraph 139). Thus, illicit firearms trafficking could be defined as a service provided by a professional trafficker who facilitates the sale of an illicit firearm between two parties (see Figure 1). From the viewpoint of economic activities, traffickers would then be classified to NACE Rev. 2 Class 47.99, other retail sale not in stores, stalls or markets.

Figure 1: Base model for illicit firearms trafficking



Source: Eurostat (2018)

For the purposes of compiling national accounts, several items linked to illegal trafficking would need to be estimated, possibly by using the following sources.

To estimate the contribution made by illegal firearms trafficking to GDP, additional data are needed. These data are: import and export volumes and prices; domestic production volumes; and street (final consumption) prices. Data on storage and transportation costs are also needed to calculate the intermediate consumption of traffickers.

As is the case with other IEAs, data availability for illicit firearms trafficking is generally scarce. Since one of the common datasets used as a proxy for quantities is data on seizures from the police and customs services (⁵), supply-side models would be better suited for modelling this phenomenon. However, data on seizures represent only a fraction of all illicit firearms trafficking, so adjustments for the perceived detection rate are necessary. Another issue with seizures is that data tend to be quite volatile, so models should be based on long-term trend analysis of time series if possible. Other input data for supply-side models could be firearm diversions (thefts/losses); crimes committed with firearms; firearms registries; and the legal production and trade of firearms.

For prices, data might be available in EU Member States within interior ministries, police records, investigative reports and other research projects. In conflict zones, prices tend to increase as security decreases (Florquin (2014)). Another data source for prices of illicit firearms could be crypto markets. It has to be noted, however, that evidence suggests prices quoted on the Darknet tend to be above the average price for illicit firearms in a number of countries (Global Financial Integrity (2017)).

As with other IEAs, data from estimates are usually calculated for a given benchmark year with estimates extrapolated thereafter. Proxies that could be used for this purpose are to be found in crime statistics, for instance firearms-related homicide rates.

Various sources indicate that the illicit firearms trafficking market in Europe is in general rather small, and that 'trafficking is almost exclusively a supplementary rather than a primary source

(5) According to ESA 2010 (paragraph 6.10) these are classified as uncompensated seizures (K.4).

of income for a small number of organised criminal groups involved' (⁶). A similar conclusion is suggested, for example, by Smekens and Verbruggen (2005) who estimated a maximum annual benchmark value of EUR 12 million for the trafficking of firearms in the Netherlands, which 'is negligible in the context of the [Dutch] national accounts'. For this reason, estimates for this IEA are not included in the European national accounts and balance of payments data.

4. Fencing of stolen goods

In Eurostat (2018), 'fencing' is defined as 'the business of buying, selling or dealing in, stolen goods'. The person who operates this business is a 'fence'; the role of the fence as a professional middle-man is essential. This is because the sale of a stolen good from a thief to a final consumer would otherwise be treated as a second-hand sale within the household sector and as such neither the sale nor the purchase would be recorded in national accounts under household consumption (ESA 2010; paragraph 3.182e). A fence could be defined in a narrower sense by applying Klokars' (1974) three criteria for a professional fence:

- a fence is a buyer and seller with direct contact with thieves (sellers) and customers (buyers);
- a fence buys and sells stolen property regularly and profitably, and has done so for a considerable period of time;
- a fence has acquired a reputation as a successful dealer in stolen property among law breakers, law enforcers and others.

Professional fences often use a legitimate 'front' business to hide their illegal trade. In most cases, the fence should be classified in the same institutional unit and same economic activity as their legitimate business. Fences often specialise in particular products: for example, pawn shops specialise in portable electronics and jewellery, while scrapyards may specialise in stolen car parts. Trainum et al. (1991) noted that together with second-hand and antique shops, pawn shops and scrapyards were identified as the most common fencing marketplaces. A relatively new phenomenon is that of e-fencing, which makes use of established e-commerce platforms as marketplaces. Therefore, depending on how the fencing is carried out, activities will be classified according to NACE Rev. 2 as either Class 47.79 (retail sale of second-hand goods in stores) or Class 47.91 (retail sale via mail order houses or via internet).

There are three essential parts to a fencing transaction (see Figure 2):

- property is stolen from its owner;
- property is bought and concealed by the fence; and
- the fence sells the stolen property to a purchaser.
- (*) See: https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/illicit-firearms-trafficking.



Figure 2: Base model for fencing

Source: Eurostat (2018)

Although this IEA falls within the production boundary of national accounts, the activity as such is not addressed in detail within ESA 2010 (7). However, fencing was discussed by the Advisory Expert Group on National Accounts when updating the 1993 System of National Accounts (SNA). When doing so, delegates unanimously agreed that the 'sale of stolen goods (fencing) should be recorded similar to the recording of sales of second-hand goods — that is, recording the value added and trade margins of distribution activities' (United Nations Statistics Division (2006)).

An example of the flows related to fencing is presented in Table 1, in which van der Werf (1997) investigates the flows that occur when a truck is stolen, fenced and exported.

	Before	Theft	Revaluation	Fencing	Value	Sale
Individual A (initial owner)	100.000	-100.000			uuucu	
Individual R (thief)	100 000	100 000	50.000	-50.000		
Individual C (fence)		100 000	50 000	50 000	20.000	_70.000
Individual D (export)				50 000	20 000	70.000
individual D (export)						70 000

Table 1: Flows related to fencing — example adapted from van der Werf (1997)

In this example, the value of the stolen asset diminishes due to the theft. Therefore, a revaluation needs to be recorded before it is received by the fence. Value added is equal to the trade margin made by the fence after the asset has been handled (8). However, when there are recurring thefts from individual A (the initial owner/retailer) 'part of the margin on the goods sold [by the retailer] must cover the cost of the stolen goods' (Eurostat (2017) paragraph 4.29, see also ESA 2010 paragraph 3.56 (9)).

As with other economic activities, producing a consistent estimate of fencing requires estimates for the volume, price and intermediate consumption (of stolen goods). As can be seen in the example above, stolen goods are likely to be elastic in price and are subject to revaluation. Nevertheless, prices should follow developments witnessed for legal second-hand markets of the respective goods. Therefore, if a solid benchmark point can be established, then a time series of prices could be used to extrapolate future values. A similar benchmarking method could be applied to estimating quantities by using data reported by interior ministries and extrapolating this based on crime statistics. For costs (in other words,

^{(&}lt;sup>7</sup>) It is briefly described in ESA 2010 paragraph 1.79: 'purchases, sales or barters of illegal drugs or stolen property are transactions, while theft is not'.

^(*) This model assumes near-zero intermediate costs for the fence (covering for example, storage, transportation, etc.).

^(?) Further considerations on the effects of theft in NA were discussed at the fourth meeting of the Advisory Expert Group on National Accounts in Havinga et al. (2006).

the intermediate consumption of the fence), Kazemier et al. (2012) suggest in their model that a 10 % fixed rate could be applied on trade margins.

It should be mentioned that fencing bears many similarities to illegal firearms trafficking and second-hand sales, therefore it is important that these activities are clearly separated from each other so that they are not double- or triple-counted.

5. Migrant smuggling

Migrant smuggling is a profitable business for criminal networks with estimated annual turnover reaching billions of euros (¹⁰). According to Europol, more than 90 % of irregular migrants use these 'facilitation services' and in 2015 alone the estimated annual turnover related to migrant smuggling was EUR 3-6 billion, with some scenarios suggesting this figure could be twice or even three times as high (¹¹).

In the EU there is a common definition for migrant smugglers which refers to persons who intentionally assist non-EU nationals to enter, transit through, or reside in an EU Member State, in breach of the law (¹²). It should be noted that migrant smuggling is different from human trafficking: whereas the former is an activity into which the parties involved enter by mutual agreement (in other words, with the consent of the person(s) being smuggled), the latter implies victimisation as there is no mutual agreement. Therefore, 'migrant smuggling is a transaction where [irregular] migrants are not forced to move and it is a resident-non-resident transaction. If the migrant is forced to move it is classified as human trafficking, not as an illegal economic activity' (Eurostat (2018) paragraph 180). Furthermore, although ESA 2010 does not explicitly mention migrant smuggling, there is a brief reference to it in SNA 2008 (¹³).

Figure 3: Base model for migrant smuggling



Source: Eurostat (2018)

- (¹⁰) European Commission, Directorate-General for Migration and Home Affairs, see: https:// ec.europa.eu/home-affairs/what-we-do/policies/irregular-migration-return-policy/ facilitation-irregular-migration_en.
- (") See: https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/facilitation-ofillegal-immigration.
- (¹²) Council Directive 2002/90/EC of 28 November 2002 defining the facilitation of unauthorised entry, transit and residence, see: http://eur-lex.europa.eu/legal-content/EN/ TXT/HTML/?uri=CELEX:32002L0090&from=EN.
- (¹³) 'Examples of activities that may be illegal but productive in an economic sense include (...) illegal transportation in the form of smuggling of goods and of people, and services such as prostitution', System of National Accounts 2008, paragraph 6.44.

In Eurostat (2018) there are two main types of agreement identified for migrant smuggling:

- a 'pay-as-you-go' agreement, no final destination is predetermined and the speed and direction of travel depends on the migrants' ability to pay at each step. In this case, the role of the smuggling coordinator could be reduced compared with the base model;
- a 'full package' agreement is less common, whereby migrants pay a fee in their country of origin to a smuggler that arranges several services so the migrant is transported to their chosen destination country.

In the base model (see Figure 3) smuggling coordinators (Individual B) are self-employed persons, providing services which should be classified to NACE Rev. 2 Class 79.12, tour operator activities, while service providers (Individual C) should be classified depending on the specific service they provide, for example, guiding, transportation, accommodation, catering.

Given that 'pay-as-you-go' agreements are the dominant mode of migrant smuggling, data compilers in destination and transit countries should be interested in transactions between resident smugglers and foreign migrants, who by definition are non-residents. From an EU perspective, models for migrant smuggling could be reduced to estimating the effects of border-crossing and transiting through the EU. These models could disregard the migrants' consumption of smuggling services before their point of entry into the EU. Frontex data from the European Border and Coast Guard Agency (2017) suggest that EU border crossing is in many cases facilitated by non-resident smugglers, therefore only a limited part of all smuggling transactions are relevant for the balance of payments of EU Member States. Transiting through the EU is more likely to be (fully) operated by resident service providers and in this case transactions between migrants and facilitators should be recorded as transportation and travel services.

Data sources for migrant smugglers' fees could be police reports, interview-based media publications or information from social media. Prices may depend on factors such as the border type (land or sea), the types of services provided by smugglers, and the risks they bear. Prices are further affected by seasonality and by shifts in supply and demand.

For the number of smuggled migrants, EU data compilers could use data on detections by police authorities and Frontex. However, these data should be adjusted using migrant detection rates to reflect true numbers. There are also statistical methods suggested by Morral et al. (2011) in the context of illegal border crossing between the United States and Mexico, such as:

- capture-recapture methods;
- stratified sampling of border crossings;
- surveys and respondent-driven sampling (14);
- synthetic and proxy measures (15).

^{(&}lt;sup>14</sup>) 'Respondent-driven sampling begins with a non-random sample of individuals from the population of interest, interviewing them about their characteristics of interest (...) and then asking them to distribute invitations to participate in the survey to their friends'.

⁽¹⁵⁾ For example, indicators derived by expert-based judgements, econometric models, mathematical simulations, etc.

The intermediate consumption of smugglers can be related to payments for other IEAs such as bribery or document forgery. On the other hand, smugglers who provide transport or accommodation services to migrants should incur normal costs. In many cases smugglers are running legal transport or accommodation businesses, for example as taxi drivers or owners/ operators of hotels and/or hostels, and therefore their intermediate consumption would be already be accounted for.

6. Infringement of intellectual property rights: counterfeit goods and piracy

Counterfeiting and piracy cover a set of IEAs related to the infringement of intellectual property rights (IPR). According to estimates by the OECD/EUIPO (2016), these activities account for 5 % of EU imports of goods. Europol/OHIM (2015) has described counterfeiting and piracy as a 'global phenomenon that has evolved significantly with the advent of better technology in all areas of the supply chain, such as manufacture, distribution, ordering and purchasing'.

In Regulation (EU) No 608/2013 of the European Parliament and of the Council of 12 June 2013 (¹⁶) concerning customs enforcement of intellectual property rights and repealing Council Regulation (EC) No 1383/2003, counterfeit and pirated goods are legally defined, where the former are:

- (a) goods which are the subject of an act infringing a trade mark in the Member State where they are found and bear without authorisation a sign which is identical to the trade mark validly registered in respect of the same type of goods, or which cannot be distinguished in its essential aspects from such a trade mark;
- (b) goods which are the subject of an act infringing a geographical indication in the Member State where they are found and, bear or are described by, a name or term protected in respect of that geographical indication;
- (c) any packaging, label, sticker, brochure, operating instructions, warranty document or other similar item, even if presented separately, which is the subject of an act infringing a trade mark or a geographical indication, which includes a sign, name or term which is identical to a validly registered trade mark or protected geographical indication, or which cannot be distinguished in its essential aspects from such a trade mark or geographical indication, and which can be used for the same type of goods as that for which the trade mark or geographical indication has been registered.

(16) See: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R0608.

Pirated goods are defined as:

goods which are the subject of an act infringing a copyright or related right or a design in the Member State where the goods are found and which are, or contain copies, made without the consent of the holder of a copyright or related right or a design, or of a person authorised by that holder in the country of production.

In addition, ESA 2010 (paragraph 3.132) defines intellectual property products as 'the result of research and development, investigation or innovation leading to knowledge, use of which is restricted by law or other means of protection'.

The inclusion of counterfeiting and piracy in national accounts was discussed during the update of the SNA 1993, when the Advisory Expert Group came up with a recommendation to include examples 'such as production and distribution of (...) counterfeit products (...)' (Havinga et al. (2006)). While there were no specific examples of counterfeiting and piracy subsequently mentioned in the SNA (¹⁷), the OECD et al. (2002) stated that the recording of IPR infringements 'does not pose special problems' as long as it 'resembles the production process for legal activities'.

In the base model of counterfeiting and piracy (see Figure 4), there is an interaction between a seller (Individual A) and a buyer (Individual B) of a counterfeit or pirated good. The seller could be a producer or an owner of the good and is usually classified as a self-employed person or a non-financial corporation.

Figure 4: Base model for counterfeit goods and piracy



Source: Eurostat (2018)

In practice, this model describes better the interaction between two such individuals when the counterfeit/pirated item is a tangible good. Indeed, the model is not particularly well suited to describing the infringement of digital copyright — a prevalent form of piracy which 'stems from the online dissemination of protected content' (Europol/EUIPO (2017)). Concerning the infringement of digital copyright, business models are usually more sophisticated and providers of illegal materials typically operate more extended supply chains, such that there are usually more than two participants involved. Figure 5 presents a common model in which there is no economic transaction between the IPR offender and the consumer, but there is a transaction with an advertising agency.

⁽¹⁷⁾ However, there were no specific objections to having more detailed examples during a discussion between members of the Advisory Expert Group.



Figure 5: Example of a digital piracy business model

In the piracy model presented in Figure 5, the economic transactions should (in theory) be registered in the financial reports of the advertising agency, and thus also in the national accounts.

If it could be assumed that this is the predominant *modus operandi* of piracy, then the volumes generated by this service could be disregarded from statistical estimation. Furthermore, the counterfeiting of tangible goods is in many cases carried out by legal enterprises, which leaves only a fraction of all IPR offences not captured in official statistics. Because the counterfeiting of tangible goods is a type of trade in goods, a valuable source of information for EU Member States could be the Anti-Counterfeiting Intelligence Support Tool (ACIST); this is a database maintained by the European Observatory on Infringements of Intellectual Property Rights (¹⁸). The database provides harmonised monthly data on the numbers and estimated value of goods that are detained by customs authorities in the EU.

Finally, counterfeiting often involves the illegal production and smuggling of tobacco and alcohol. It is therefore important to separate counterfeiting from the core smuggling activity, and to apply adjustments for double-counting in cases where this counterfeiting and piracy are already included in national accounts.

Source: Europol/EUIPO (2017), p. 27

^{(&}lt;sup>18</sup>) Anti-Counterfeiting Intelligence Support Tool (ACIST); an EU database that gathers information on detentions, at borders and in the internal market, of items that are suspected of infringing intellectual property rights, see: https://www.tmdn.org/ enforcementintelligence-webapp/.

7. Bribery

Bribery is a corrupt practice that is defined in Eurostat (2018) as 'the act of taking or receiving something with the intention of influencing the recipient in some way that is favourable to the party providing the bribe'. In a base model for bribery (see Figure 6), there is a service provider (Individual A) who produces a specific service for a consumer of this service (Individual B) against the payment of a bribe. As with other IEAs mutual consent between the two parties is essential.

Figure 6: Base model for bribery

Individual A (service provider and recipient of the bribe)



Individual B (service recipient and payer of the bribe)

Source: Eurostat (2018)

Although bribery is not explicitly mentioned in ESA 2010 or SNA 2008, it was discussed by the Advisory Expert Group on National Accounts in 2006 when the SNA 1993 was being updated. Table 2 presents the outcomes of the e-discussion related to the treatment of bribery within national accounts as recommended in OECD (2002).

Although most members agreed with the propositions in Table 2 during this preliminary e-discussion, the final outcome of the debate was that 'bribery should not be treated as compensation of employees', contrary to the possibilities mentioned in OECD (2002) and that 'bribery should not be discussed in the updated SNA' (United Nations Statistics Division (2006)).

 Table 2: Recording of bribery in national accounts — results from e-discussions among the Advisory Expert Group

Question	Agree	Disagree	No opinion
Do you agree that in the provision of market goods and services, bribes taken by employees as an additional margin on the 'official' price should be recorded as an increase in the value of output of market production matched by an identical increase in the compensation of employees?	16 (76 %)	5 (24 %)	0 (0 %)
Do you agree that if the bribery is accepted as a standard practice in provision of non-market services, then the bribe should be recorded as additional compensation of employees and an increase in output of Government	12 (57 %)	7 (33 %)	2 (10 %)
Do you agree that the bribes linked to the provision of non-market services that are not allowed or not publicly accepted should be recorded as current transfers? The same holds for payments to persons in privile ged positions to obtain a contract?	18 (86 %)	2 (19 %)	1 (5 %)

Source: United Nations Statistics Division (2006)

However, Eurostat (2018) adopts the OECD's recommendations. Thus, it suggests that bribery is reflected in increased output and compensations of employees, or mixed income/gross operating surplus when the service provider is a self-employed/unincorporated enterprise. Depending on their sectoral classification, bribes are household final consumption or intermediate consumption for the service consumers. Another practical recommendation from Eurostat (2018) is to treat market and non-market transactions similarly when bribes are not allowed or not publicly accepted.

From a statistical perspective it could be challenging to define subjective terms such as 'publicly accepted' or 'standard' practice, especially when these involve bribery. One possible way of defining bribery as an economic transaction in this context could be by applying a magnitude-based approach. This approach would leave out all high-value transfers, assuming that these are not publicly accepted by default. Therefore, the type of bribery that could potentially affect economic output would be so-called 'petty corruption'.

Although there is no official statistical definition of petty corruption (¹⁹), references to it can be found in policy papers, the European Commission (2017) described it as corruption that 'occurs in the interaction between lower echelons of the public administration and individual citizens'. The phenomenon is also of interest in academic research, where Argandoña (2017) described it as: 'small payments to an officer or employee, public or private, who is responsible for a non-discretionary service, in order to facilitate, accelerate, or cheapen a procedure, for example, issuing a passport or connecting a house to a power distribution network'.

There are two main reasons for the relative lack of interest in estimating petty corruption for the purposes of national accounts compilation. The first is that it is hard to define what constitutes petty corruption, in other words, what is the objective extent of the public's acceptance. The second is that there is no evidence that this form of bribery has a significant impact on economic output. On the contrary, petty corruption was reported by the European Commission (2014) to be widespread in only a few places and is usually 'perceived to be higher than it is actually experienced by citizens in their everyday life' (Bąkowski and Voronova (2017)).

Eurostat (2018) suggests two evidence-based methods to quantify bribery. The first involves producing estimates using administrative data; the main problem with this method is the low rate of reporting for such offences. However, the statistical community is trying to come up with harmonised indicators for measuring corruption. Following the European Commission (2011) action plan on crime statistics, the European Commission (2016) collected and released a set of preliminary official criminal justice statistics on corruption offences. The second evidence-based method for producing statistics on bribery involves conducting sample surveys on corruption and integrity. Surveys such as these have been recognised within Eurostat (2018) as being 'the

(¹⁹) The adopted standard breakdown of corruption follows the International Classification of Crimes for Statistical Purposes, which disaggregates corruption into:

07031 Bribery; 070311 Active bribery; 070312 Passive bribery; 07032 Embezzlement; 07033 Abuse of functions; 07034 Trading in influence; 07035 Illicit enrichment; 07039 Other acts of corruption.

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most solid source of information, as suggested by an increasing number of experiences, both at national and international level'. A notable effort to standardise survey methods in producing evidence-based corruption statistics is being steered by a task force on corruption measurement that is organised by the United Nations Office on Drugs and Crime (UNODC) (²⁰), which has recently published a *Manual on Corruption Surveys* — *Methodological guidelines on the measurement of bribery and other forms of corruption through sample surveys* (United Nations Office on Drugs and Crime (2018)).

8. Illegal gambling

Turnover from gambling in the EU was estimated at EUR 84.9 billion in 2011, an amount that is thought to be growing by about 3 % per year (²¹). Illegal gambling exists alongside legal gambling, and it resembles its legal counterpart in many ways. Due to its addictive nature, illegal gambling is an IEA that is often compared with the production and sale of illegal drugs, while it is often investigated together with other illegal and criminal activities such as money laundering and usury (lending money at unreasonable, unethical or immoral rates).

Eurostat (2018) borrowed the definition of illegal gambling that is taken from the 2010 EU Presidency Progress Report on the legal framework for gambling and betting in the Member States of the EU (Council of the European Union (2010)). It describes illegal gambling as gambling 'in which operators do not comply with the national law of the country where the services are offered, provided those national laws are in compliance with EU treaty principles'.

Recording illegal gambling transactions is similar to recording legal gambling transactions, where 'the amounts paid for lottery tickets or placed in bets consists of two elements: the payment of a service charge to the unit organising the lottery or gambling and a residual current transfer that is paid out to the winners' (ESA 2010, paragraph 4.135). Thus, in the base model of illegal gambling (see Figure 7) there is an interaction between the provider of illegal gambling (individual A) and a gambler (individual B). The economic activity of individual A falls within NACE Rev. 2 Division 92, gambling and betting activities.

Figure 7: Base model for illegal gambling

Individual A (provider of illegal gambling in the origin country or destiunation country) Individual B (resident/non-resident illegal gambler)

Source: Eurostat (2018)

(20) United Nations Office on Drugs and Crime (UNODC), the task force on corruption includes experts from national and international organisations active in the field of corruption measurement both in developed and developing countries. The work of the task force is in accordance with the framework of the 2030 Sustainable Development Agenda, particularly target 16.5, 'Substantially reduce corruption and bribery in all their forms'.

(21) European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, see: http://ec.europa.eu/growth/sectors/gambling_en.

Tab	o le 3: Illegal gambling estimates	
	Size of illegal gambling market	Size of the grey market in April 2016
BE		20.0 % (EUR 46.8 million)
BG		19,9 % (EUR 27.0 million)
CZ	Verifiable statistics or legal estimations of the illegal gambling market are not available in Czech Republic. Those studies, that are available, rely on very rough estimates.	40.0 % (EUR 92.9 million)
Ŋ		12.0 % (EUR 57.7 million)
DE	State authorities estimate the 2015 gross gaming revenues from illegal casino games and online poker to be EUR 885 million (Source: Jahresreport 2014 der Glücksspielaufsichtsbehörden der Länder, 22.12.2015). The size of the total illegal gambling market in Germany is estimated by various studies to be EUR 4-22 billion (Source: Reeckmann, Illegal gambling – Need for research and action, ZfWG, European Journal of Gambling Law, 2015, p. 106).	71.0 % (EUR 865.7 million)
出	There is no illegal gambling or its effect is very small.	32.0 % (EUR 8.7 million)
ш		99.0 % (EUR 755.8 million)
Ш	Market actors that participated in the [2010] survey estimate that the annual turnover of illegal online gambling reaches EUR 4.0-4.5 billion, while that of illegal gaming machines is EUR 0.5-1.0 billion. On the basis of [2014] survey, it was estimated that 65 000 gaming machines operating in the illegal gambling market generate a gross gaming revenue of EUR 1.3 billion annually for the persons that operate them illegally.	80.0 % (EUR 226.1 million)
ES		30.0 % (EUR 175.9 million)
FR	Estimated to be worth 15 to 20 % of the legal online market (approximately EUR 150 million gross gaming revenue).	28.0 % (EUR 361.3 million)
HR		37.8 % (EUR 45.0 million)
⊨	The illegal gambling market in Italy is estimated to be worth at least EUR 23 billion.	20.0 % (EUR 210.6 million)
5		76.0 % (EUR 27.5 million)
N		66.0 % (EUR 22.3 million)
占		100.0 % (EUR 12.4 million)
LU	There are no legal online gambling offers in Luxembourg (except a limited offer of the Loterie Nationale with a maximum bet threshold per week of EUR 250). For the 540 000 people in Luxembourg, the value of the illegal market can thus be estimated between EUR 21 million and EUR 28 million.	100.0 % (EUR 17.6 million)
H	Estimated at EUR 100 million annually.	29.0 % (EUR 19.0 million)

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Tab	le 3 (continued): Illegal gambling estimates	
	Size of illegal gambling market	Size of the grey market in April 2016
MT		
N		82.0 % (EUR 212.6 million)
AT	A recent 2016 study from Kreutzer Fischer and Partner estimates around 3 000 illegal slot machines in Austria. In relation to illegal online gaming it is estimated that 50 % of the online gambling turnover in Austria is attributable to online gaming offers operating without proper national licenses.	47.0 % (EUR 120.7 million)
Ъ	Revenues from illegal slot machine operation have been estimated at around EUR 40 million. Source -unofficial estimates. Terrestrial sports betting is legal in Poland, but online casino games are not permitted in Poland. Illegal betting revenues from both sports betting and online casino games is unofficially estimated to amount to approximately EUR 900 million annually, effectively 90 % of the entire online market.	73.0 % (62.0 million)
РТ	Illegal offline gambling: EUR 141.5 million in 2001 (according to a report by Gaming Inspection's Operational Program against Illegal Gambling). Illegal online gambling: EUR 40 million in 2012 (according to a report by the Government Commission for Online Gaming); EUR 60 million in 2015 (according to independent consultants).	48.0 % (EUR 57.3 million)
RO		55.0 % (EUR 42.8 million)
SI		28.0 % (EUR 15.6 million)
SK	Estimated size is EUR 28 million annually. This includes online and land-based gambling.	32.2 % (EUR 40.2 million)
ш	Illegal online casino, betting and poker EUR 140 million. RAY's estimate based on: PAF figures, H2GC, Alexa.com, gambling researches, Veikkaus's estimate of the market. Illegal offline market: approximately EUR 0.	30.0 % (EUR 194.2 million)
SE	The most recent Swedish Gaming Board report (2014) states that unregulated gambling operators (in other words operators without a national license) in Sweden generate gross gaming revenues of approximately EUR 445 million or approximately 20 % of the total Swedish market.	56.0 % (EUR 478.7 million)
Я	No verifiable data is available.	
<i>Sourc</i> citing	e: European Casino Association, Country-by-country report; European Gaming and Betting Association j H2 Gambling Capital, European interactive map	

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The economic output of institutional units providing illegal gambling is the service charge, in other words, the value of the payments made by individual B minus any winnings collected. The term used in the gambling industry for this difference is gross gambling turnover (GGT). Value added is GGT minus the intermediate costs of individual A such as advertising, rent and other hosting charges incurred.

Illegal gambling can be divided into different types of games. For example, Eurostat (2018) lists games in casinos, live poker, lotto, bingo, e-gaming and sports betting machines. A more general approach would be to separate online and offline illegal gambling. The former has been explored in a few country studies, the main focus of which is illegal gambling machines — for example, Calderoni et al. (2014) and Wärmark et al. (2008). Both of these studies use a supply-side model to provide estimates for the number of illegal gambling machines.

In Europe, legal gambling is predominantly carried out offline (rather than online). However, according to the European Gaming and Betting Association (EGBA) online gambling is growing rapidly, and is expected to account for nearly a quarter of all revenues in the industry by 2020 (European Gaming and Betting Association (2018)). In estimating the size of the illegal gambling market, it could therefore be a good idea to divide estimates into offline illegal gambling (where supply-side models as detailed above are more appropriate), and online illegal gambling (where demand-side models may be more appropriate).

On cross-border gambling, the European sector-specific terminology differentiates between the 'grey' and the 'black' market. In the former, an institutional unit licensed in one EU Member State provides a service in another Member State. According to the European Commission (2016, pages 212-228), there is a large volume of case-law defining illegal activities, which is not within the scope of the current study. Due to the non-harmonised nature of the gambling sector within the EU, there could be an issue of double-counting if the illegal share of gambling is to be statistically estimated. Nevertheless, according to some estimates the illegal gambling market is significant in a number of EU Member States (see Table 3). Therefore, illegal gambling appears seems to be potentially the most significant IEA in terms of its economic impact.

9. Concluding remarks

Macroeconomic statistics should cover all economic phenomena irrespective of whether they are legal or illegal, as long as they can be defined as economic transactions. To get a full and accurate picture of the value of production and consumption in a given period, both declared and undeclared production activities must be taken into account. Including IEAs in statistical recording avoids the distortion of key economic indicators that are derived from macroeconomic accounting.

It took many years of work and many debates among international experts before the recording practices of IEAs within the European Statistical System were harmonised in 2014. The current recommended practice is that a minimum of three core IEAs should be included in macroeconomic statistics. The recommendation to include only these high-value IEAs is practical: statistical compilers should not commit disproportionate resources to calculating insignificant items.

However, it is worth researching how other IEAs could be approached for inclusion in official statistics. This can be done by reviewing existing literature and listing data sources and methods. Eurostat (2018) is a good foundation for this.

One of the interesting conclusions that can be drawn from this study is that IEAs are increasingly related to illegal e-commerce; a non-exhaustive list that could be drawn from this study includes Darknet e-markets, e-fencing, illegal online casinos, illegal online sports betting, or online piracy. The growing importance of illegal online services is not surprising, as IEAs tend to follow trends in the wider economy. Further research could attempt to estimate the value of this broad class of illegal online services and their importance to national economies.

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References

Argandoña, A. (2017), 'Petty Corruption — Facilitating Payments and Grease Money', in *The Handbook of Business and Corruption* (edited by Aßländer M. S. and Hudson S.), pp. 49-70.

Bąkowski, P. and S. Voronova (2017), *Corruption in the European Union*, European Parliamentary Research Service.

Calderoni, F., S. Favarin, L. Garofalo and F. Sarno (2014), 'Counterfeiting, illegal firearms, gambling and waste management: an exploratory estimation of four criminal markets', *Global Crime*, Vol. 15 (1-2), pp. 108-137.

Council of the European Union (2010), 'Legal framework for gambling and betting in the Member States of the European Union', *Spanish Presidency Progress Report*, Brussels.

European Border and Coast Guard Agency (2017), FRAN Quarterly, Q1-2017.

European Commission (2011), *Measuring Crime in the EU: Statistics Action Plan 2011-2015*, COM(2011) 713 final, Brussels.

European Commission (2013), *Reducing gun violence, the way forward*, http://europa.eu/rapid/ press-release_MEMO-13-916_en.pdf.

European Commission (2014), EU Anti-corruption report, COM(2014) 38 final.

European Commission (2016), Collection of official data on corruption offences, Brussels.

European Commission (2017), European Semester: Thematic factsheet — Fight against corruption, Brussels, p. 2.

European Gaming and Betting Association (2018), *EU-28 Online Gambling – Key figures 2017*, Brussels.

Europol/EUIPO (2017), 2017 Situation Report on Counterfeiting and Piracy in the European Union, Brussels.

Europol/OHIM (2015), 2015 Situation Report on Counterfeiting in the European Union, Brussels.

Eurostat (2014), *Materiality threshold*, Eurostat/C3/GNIC/283, 29th meeting of the GNI Committee, Luxembourg.

Eurostat (2017), Eurostat-OECD compilation guide on inventories, Luxembourg.

Eurostat (2018), Handbook on the compilation of statistics on illegal economic activities in national accounts and balance of payments, Luxembourg.

Florquin, N. (2014), 'Arms Prices and Conflict Onset: Insights from Lebanon and Syria', *European Journal on Criminal Policy and Research*, Vol. 20-3, pp. 323-341.

Fløttum, E. J. (2007), Differences between SNA93 and ESA95, Statistics Norway.

Global Financial Integrity (2017), Transnational Crime and the Developing World, Washington.

Havinga, I., G. Singh, H. Smith and V. Vu (2006), 'Illegal activities in the 1993 SNA', SNA/M1.06/28.1 Issue 33: Illegal and underground activities.

Kazemier, B., A. Bruil, A. van de Steeg and M. Rensman (2012), *The contribution of illegal activities to national income in the Netherlands*, Statistics Netherlands.

Klokars, C. B. (1974), The professional fence, New York.

Morral, A., H. Willis, and P. Brownell (2011), *Measuring Illegal Border Crossing Between Ports of Entry: An Assessment of Four Promising Methods*, RAND Corporation Homeland Security and Defense Center.

OECD, IMF, ILO and CIS (2002), Measuring the non-observed economy: a handbook, Paris.

OECD/EUIPO (2016), Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact, Paris.

Smekens, M. and M. Verbruggen (2005), *The illegal economy in the Netherlands*, Statistics Netherlands.

Trainum, J., N. Brown, and R. Smith Jr (1991), 'ROP-ing in fences', *FBI Law Enforcement Bulletin*, Vol. 60.

United Nations (2001), Protocol against the illicit manufacturing of and trafficking in firearms, their parts and components and ammunition, supplementing the United Nations convention against transnational organized crime, New York.

United Nations Office on Drugs and Crime (2018), http://www.unodc.org/documents/data-and-analysis/Crime-statistics/Corruption/Manual_2018_web.pdf.

United Nations Statistics Division (2006), *Illegal activities: summary conclusion*, Fourth meeting of the Advisory Expert Group on National Accounts.

United Nations Statistics Division (2006), 'Report on e-discussion on illegal activities in the 1993 SNA', *SNA/M1.06/28.2 Update of the 1993 SNA — Issue No. 33*, Fourth meeting of the Advisory Expert Group on National Accounts.

Van der Werf, R. (1997), 'Registration of illegal production in the national accounts of the Netherlands —Statistics Netherlands', *STD/NA/RD(97)2*, OECD-UNECE-EUROSTAT meeting of national accounts experts, Paris, 3-6 June 1997.

Wärmark, B. M., M. Björling, M. Pappila and J. Engdahl (2008), *Illegal activities in the Swedish National Accounts*, Statistics Sweden.