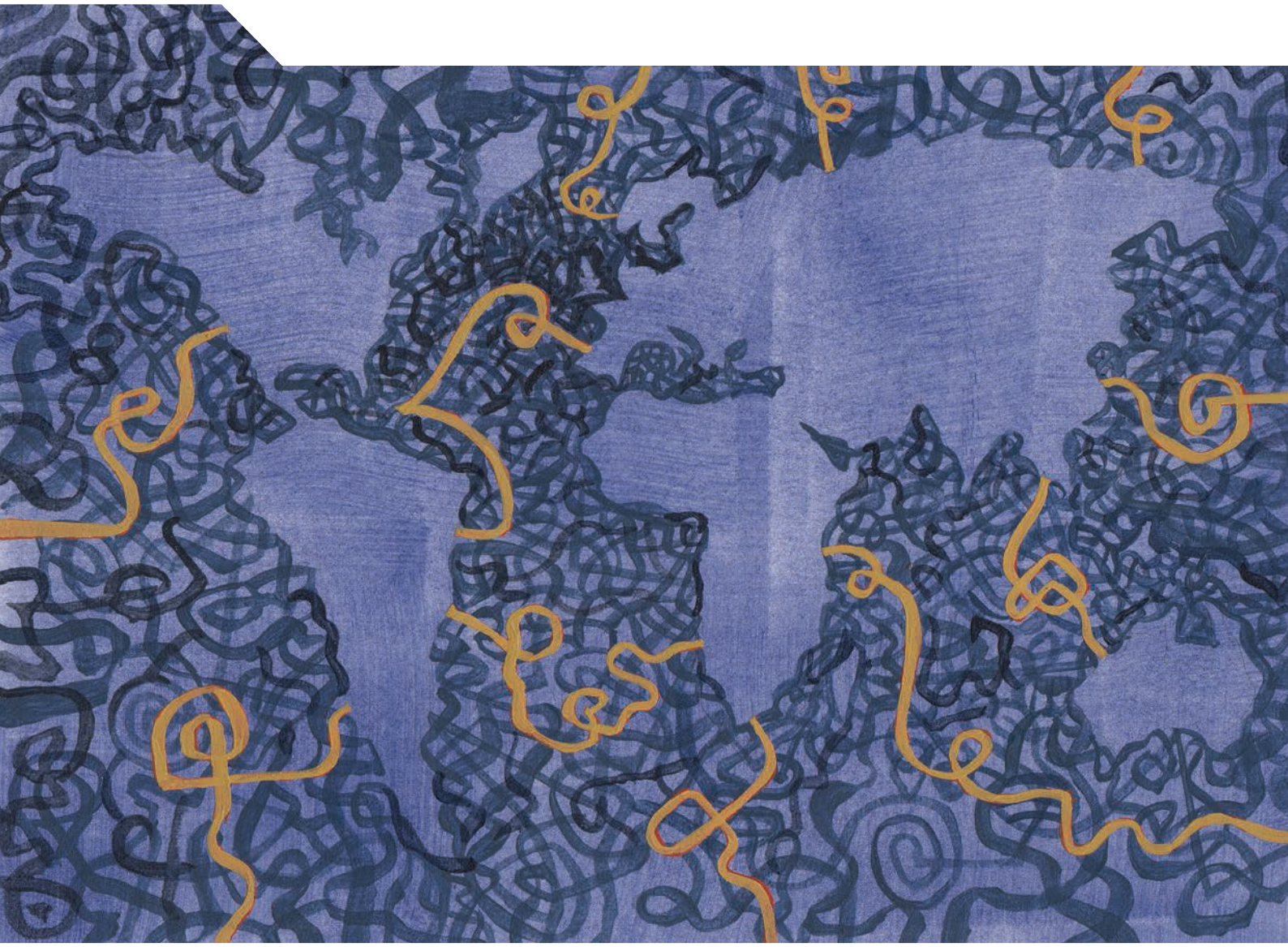
Mapping the Real Routes of Trade in Fake Goods



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Mapping the Real Routes of Trade in Fake Goods

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Preface

Globalisation, trade facilitation, and the rising economic importance of intellectual property are drivers of economic growth. However, they have also created new opportunities for criminal networks to expand the scope and scale of their operations, free-riding on intellectual property and polluting trade routes with counterfeit goods. The consequences for the economy are serious. Trade in counterfeit goods not only damages economic growth but also undermines good governance, the rule of law and citizens' trust in government, and can ultimately threaten political stability. In some cases, the fakes can also have serious health, safety and environmental implications.

Precise information about the routes of trade in counterfeit goods is essential for tailoring effective governance responses to this scourge. The complexity of the routes of trade in fakes can be a formidable obstacle for enforcement authorities.

We are very pleased that our two institutions were able to work together to analyse a unique set of global customs seizure data to chart the routes of trade in fake goods. We are also grateful to the World Customs Organization, the European Commission's Directorate-General for Taxation and Customs Union, and the United States Department of Homeland Security for providing excellent data on customs seizures of IP-infringing products.

We are confident that this research will make a major contribution to the understanding of trade in counterfeit and pirated goods. We trust that it will help governments develop targeted policy responses and strengthen governance frameworks to tackle this phenomenon.

António Campinos,
Executive Director, EUIPO

Rolf Alter,
Director, OECD/GOV

Foreword

The broadening scope and magnitude of counterfeiting and piracy, and counterfeit trade in particular, are key challenges in the global economy, which is increasingly innovation-driven. The economic threat that these practices pose undermines innovation and hampers economic growth, while generating adverse health, safety and security effects for governments, businesses and consumers. Organised criminal groups are playing an increasingly important role in these activities, benefiting significantly from profitable counterfeiting and piracy operations.

The current study was conducted jointly by the OECD and the EU Intellectual Property Office (EUIPO), in order to provide policy makers with robust empirical evidence about this threat. As shown by the 2016 OECD-EUIPO report *Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact*, trade in counterfeit and pirated goods amounted to up to 2.5 % of world trade in 2013, and that it was even higher when considering only the EU, where it amounted to up to 5 % of imports.

The analysis carried out in 2016 also found that parties that engage in the trade in counterfeit and pirated products tend to ship them via complex trade routes. To complement that analysis, this report looks at the issue of origin of fake goods by industry, identifying both the economies that produce the goods and those that serve as transit points in trade.

The analysis shows that China is the top producer of counterfeit goods in nine out of ten analysed product categories, while Hong Kong (China), United Arab Emirates and Singapore are global hubs for trade in counterfeit goods. The analysis also uncovers a large number of regional and sector-specific patterns.

This report builds on two equally valid policy concerns. The first is the impact of crime and illicit trade activities on good governance, public safety and the rule of law. The second is the negative effect that counterfeit trade has on legitimate competitive advantage of rights holders, and consequently on innovation, employment and long-term economic growth.

At the OECD, this study was conducted in the context of the Task Force on Countering Illicit Trade (TF-CIT), of the High Level Risk Forum that focuses on evidence-based research and advanced analytics to assist policy makers in mapping and understanding the market vulnerabilities exploited and created by illicit trade.

The report was prepared by Piotr Stryszowski, Senior Economist and Florence Mouradian, Economist at the OECD Directorate for Public Governance and Territorial Development jointly with Michał Kazimierczak, Economist at the European Observatory on Infringements of Intellectual Property Rights of the EUIPO, under the supervision of Stéphane Jacobzone, Counsellor, OECD and Nathan Wajsman, Chief Economist, EUIPO. The authors are grateful to Peter Avery (OECD) for his contributions.

The authors wish to thank the OECD experts who provided valuable knowledge and insights: Dominique Guellec, Przemysław Kowalski, and Monika Sztajerowska. The authors would also like to thank experts from the OECD member countries and participants of several seminars and workshops for their valuable assistance. A special expression of appreciation is given to Asrat Tesfayesus from the US Patent and Trademark Office and to Nikolaus Thumm from the European Commission's Joint Research Centre.

The OECD Secretariat wishes to thank Liv Gaunt, Fiona Hinchcliffe and Andrea Uhrhammer for their editorial and production support.

The quantitative research in this study relied on a rich, global database on customs seizures, provided by the World Customs Organization (WCO) and supplemented with regional data submitted by the European Commission's Directorate-General for Taxation and Customs Union, the US Customs and Border Protection Agency and the US Immigration and Customs Enforcement. The authors express their gratitude for the data and for the valuable support of these institutions.

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Acronyms and abbreviations

EU	European Union
EUR	Euro
FTZ	Free trade zone
GDP	Gross domestic product
GTRIC-e	General trade-related index of counterfeiting for economies
HS	Harmonized System
ICT	Information and communication technology
IP	Intellectual property
RCAP-e	Relative comparative advantage for production index
RCAT-e	Relative comparative advantage for being a transit point index
UAE	United Arab Emirates
USD	United States dollars
WCO	World Customs Organization
WIPO	World Intellectual Property Organization

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Executive summary

Trade in counterfeit and pirated goods is a worldwide phenomenon that is growing in scope and magnitude. Globalisation, trade facilitation, and the rising economic importance of intellectual property have been fuelling economic growth on the one hand, while on the other opening up new opportunities for criminal networks to expand the scope and scale of their operations, with serious negative consequences for the economy and society. Trade in counterfeit pirated goods also undermines good governance, the rule of law and citizens' trust in government, and can ultimately threaten political stability.

Parties that engage in the trade of counterfeit and pirated products tend to ship infringing products via complex routes, with many intermediary points. The transit points are used to i) facilitate falsification of documents in ways that camouflage the original point of departure, ii) establish distribution centres for counterfeit and pirated goods, and iii) repackage or re-label goods. In addition, while imports of counterfeit goods are, in most cases, targeted by local enforcement authorities, goods in transit are often not within their scope, which means they are less likely to be intercepted.

This study assesses the complex routes associated with the global trade in counterfeit and pirated goods. It is important to note that higher reported shares of custom seizures, as well as higher reported estimates for being a source of counterfeited products (i.e. the GTRIC-e scores), do not necessarily suggest that an economy is a significant producer of counterfeits. The analysis in this study uses a set of statistical filters to go further in clarifying the role of important provenance countries. It identifies key producing economies and key transit points for ten main sectors that are particularly vulnerable to counterfeiting. These sectors span a wide range of IP-intense, tradable goods, including fast-moving-consumer goods such as foodstuff or cosmetics, to business-to-business products, such as spare parts and computer chips. The combined trade of fakes in these sectors account for USD 284 billion in 2013 (EUR 208 billion in 2013), more than half of total estimated trade in fake goods.

In the analysis, the People's Republic of China (hereafter "China") emerges as the top producer of counterfeit goods in nine out of ten analysed categories. In addition, several Asian economies, including India, Thailand, Turkey, Malaysia, Pakistan and Viet Nam are important producers in many sectors, although their role is much less significant than China's. Turkey appears to be an important producer in some sectors – such as leather goods, foodstuff and cosmetics – which are sent by road to the EU.

The data identifies several important transit points for trade in counterfeits, including Hong Kong (China), the United Arab Emirates and Singapore, which are handling trade in counterfeit goods in all the analysed product categories. Fake goods arrive in large quantities in containers and are sent further in small parcels by post or courier services.

In addition, there are some important regional transit points. For example several Middle Eastern economies (e.g. the United Arab Emirates, Saudi Arabia and Yemen) are important transit points for sending fake goods to Africa. Four transit points – Albania,

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Egypt, Morocco and Ukraine – are of particular significance for redistributing fakes destined for the EU. Finally, Panama is an important transit point for fakes en route to the United States.

Finally, the data show that small shipments and parcels tend to dominate numerous trade routes, reflecting the shrinking costs of postal and courier shipments and the increasing importance of Internet and e-commerce in international trade. Shipments with fewer than ten items accounted for about 43% of all shipments, on average.

This analysis can inform policy discussions among individual governments or on a regional or global level that aim to prevent, reduce or deter trade in counterfeit and pirated goods. It can help in designing more tailored policy responses to strengthen governance frameworks aiming to tackle this risk. The report calls for more in-depth analysis for the development of efficient enforcement and governance frameworks in three areas:

- the role of free trade zones in transhipments
- the detection problem posed by small shipments
- the economic features of provenance economies, including the quantitative relationship between the intensities of counterfeiting and indices of free trade, quality of governance, and public sector integrity

Chapter 1. Mapping the real routes of trade in fake goods

Parties that trade in counterfeit and pirated products tend to ship infringing products via complex trade routes in order to cover their tracks. These complex routes are a formidable obstacle for enforcement authorities; mapping the trade routes for fake goods is therefore essential for developing effective policies to counter this threat. This chapter describes OECD research which assesses the complex routes associated with the global trade in counterfeit and pirated goods. The chapter provides an overview of the key issues and the methodology used.

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Introduction

The broadening scope of trade in counterfeit and pirated goods[1] is currently an issue of high importance and increasing policy priority. For firms, counterfeiting and piracy have adverse impacts on sales and profits. For governments, they imply potentially severe revenue, economic, health, safety and security impacts. In addition, trade in counterfeit and pirated goods raises serious governance challenges, as it provides revenues to criminal groups, allowing them to benefit from highly profitable counterfeiting and piracy operations.

In order to improve the factual understanding of counterfeit and pirated trade, and to formulate evidence-based policy messages, the OECD and the European Union Intellectual Property Office (EUIPO) together carried out a comprehensive economic assessment of the problem, and of the main governance gaps that are allowing this trade to occur (OECD/EUIPO, 2016). It found that imports of counterfeit and pirated goods were worth USD 461 billion in 2013, or around 2.5% of global trade. Developed economies seem to be targeted especially: fake goods amounted to up to 5% of the value of overall imports to the European Union.

The analysis carried out in the OECD-EUIPO report led to the identification of the key provenance economies of counterfeit imports into the European Union. However, it did not indicate the nature of these provenance economies, especially whether they were producing counterfeit products or playing a transit role in their trade.

Parties that trade in counterfeit and pirated products tend to ship infringing products via complex trade routes. While the use of transit points is not uncommon in international trade, counterfeiters have additional incentives to use such routes. These include the ability to camouflage the original point of departure, to establish distribution centers for counterfeit and pirated goods, and to repackage or re-label items. In addition, while imports of counterfeit goods are, in most cases, targeted by local enforcement authorities, goods in transit are often not within their scope, which means they are less likely to be intercepted.

Precise information about the economy of origin is essential for efficient enforcement. Hence, complex trade routes become a formidable obstacle for enforcement authorities, as the economy of origin is concealed through the various transit points. Consequently, a mapping of trade routes in fake goods is essential for developing effective policies to counter these illicit activities. The overall good quality of available data on trade in counterfeit goods enabled a quantitative exercise to be carried out to shed light on which provenance economies are more likely to be producers of infringing goods, and which are more likely to be the transit points.

This study assesses the complex routes associated with the global trade in counterfeit and pirated goods. This chapter provides an overview of the key issues and the methodology used, while Chapter 2 presents the findings for ten main sectors particularly vulnerable to counterfeiting. These sectors span a wide range of IP-intense, tradable goods, including fast-moving-consumer goods such as foodstuff or cosmetics, to business-to-business products, such as spare parts and computer chips. Chapter 3 summarises the main findings and outlines the next steps for deepening the investigation into trade in fake products.

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Trade in fake goods: what we know

When deciding to engage in the illegal production of counterfeit or pirated goods, those involved need to decide: 1) what products will be counterfeited or pirated; 2) where the products will be produced; 3) where the infringement will take place; 4) which geographic markets will be targeted; and 5) how products will be shipped to end markets without being intercepted. The factors driving these decisions include the profitability and magnitude of potential markets for candidate products, technological and logistical factors associated with the production and distribution of the products, and the risk and consequences of detection by law enforcement bodies (OECD, 2008).

Recent analysis indicates that the range of products being counterfeited and pirated is broad, including high-end consumer luxury goods such as watches, perfumes and leather goods; business-to-business products such as machines, chemicals or spare parts; and common consumer products such as toys, pharmaceuticals, cosmetics and foodstuff (OECD/EUIPO, 2016). Every product protected by intellectual property laws can be counterfeited; there are records, for example, of seized counterfeit fresh fruits and other foodstuff. Some counterfeit products, such as pharmaceuticals, spare parts and toys, can be of low quality, and can create significant health and safety threats.

Counterfeit and pirated products originate from virtually all economies, on all continents. The largest source of infringing products that are seized while in international commerce, however, is East Asia, with the People's Republic of China, and Hong Kong, China together accounting for over 80% of the seizures made by other countries during 2011-13 (based on OECD/EUIPO, 2016). The markets for infringing products that are traded internationally, on the other hand, are global, led by the United States, European Union (EU) and the Middle East.

Data on seizures help reveal the distribution networks that are used to ship products to end markets. During 2011-13, an average of almost 62% of seizures worldwide involved postal shipments (OECD/EUIPO, 2016). Air transport and sea followed, accounting for slightly more than 20% and 9%, respectively; vehicle transport accounted for about 7%. Other modes (including rail and pedestrian traffic) were negligible.

The number of seizures, however, is only part of the story. A closer examination of EU experience shows that while the number of sea seizures accounted for 3% of the total in 2013, they accounted for 74% of the total number of items seized, and 51% of the total value of seizures (Table 1.1). The implication is that bulk shipments are more likely to be moved by vessels; each sea seizure yielded an average of 12 300 items, compared to 16 items per post seizure.

Table 1.1.EU seizures, by means of transport, 2015

	Number of seizures		Number of items seized		Retail value	
Transport means	Number	% of total	Number	% of total	Value (EUR)	% of total
Air	14 970	18.5	4 865 259	12	845 943	18.5
Express services	5 418	6.7	2 199 781	5.4	87 155 307	13.6
Post	57 185	70.5	893 059	2.2	57 790 226	9
Rail	2	0	21	0	4 500	0
Road	1 073	1.3	2 647 606	6.5	52 852 967	8.2
Sea	2 450	3	30 122 949	74	325 459 380	50.7

Source: European Commission (EC) (2015), *Report on EU Customs Enforcement of Intellectual Property Rights: Results at the EU Border*, https://ec.europa.eu/taxation_customs/sites/taxation/files/2016_ipr_statistics.pdf.

In terms of trends, the share of small shipments, mostly by postage or by express services, is growing (OECD/EUIPO, 2016; WCO, 2016). This is apparently due to the shrinking costs of such modes of transport and the increasing importance of Internet and e-commerce in international trade. For traffickers, small shipments reduce the risk of bulk losses in the event of interception (in a shipping container, for example), but criminal groups are also becoming adept at evading postal checks (Europol/OHIM, 2015). They are, for example, using stickers/stamps from international postal services to give the impression that shipments have come from another EU member state, when in fact they may have arrived from Thailand or India. This technique is known as “drop shipping”. To prevent interception, products are imported into the European Union in bulk into a member state with fewer controls, and the packages are then re-directed to Belgium, Germany, Spain, or other EU member country with an EU postal stamp/sticker. In a related technique, criminals route postal packages containing counterfeit pharmaceuticals via Canada, which is known for its high standards and high quality, thereby giving consumers a false sense of confidence in the product.

Why are the trade routes of counterfeit trade so complex?

The use of complex trade routes with transhipment points is standard practice in all international trade. This is done for a number of reasons. For instance, there are many ports that are not directly connected with one shipping line, and many shipments therefore need to be broken down and shipped in several legs. Change of mode of transport during the journey is another reason for transhipment, for example from vessel to road transport or from rail to vessel. Other reasons include consolidation (combining small shipments into a large shipment) and deconsolidation (dividing a large shipment at into smaller ones).

Just like trade in legal goods, trade in counterfeit products also involves complex trade routes, but complexity is used to escape enforcement. Trade routes in counterfeit and pirated goods are constantly being adapted by counterfeiters to avoid detection (Box 1.1). Criminal organisations play a major role; they have effectively transformed counterfeiting into a veritable illicit mass production and distribution enterprise involving extremely complex distribution networks (UNICRI, 2011). Finding ways to disrupt these networks has proven difficult.

Box 1.1. Methods used by counterfeiters to avoid detection

As in other types of customs violations, offenders trying to trade counterfeit products use every possible way to avoid detection. Putting counterfeit goods deep in containers, mixing them with legitimate goods or putting them behind legitimate goods are classic and easy ways of trying to deceive customs. False import/export declarations, for example that report "non-name" products, are also a widely popular method.

Further to these traditional concealment schemes, new types of *modus operandi* are being observed. New methods include sending parts of counterfeit items individually and assembling them in final markets, or sending final products separately from their logos, packaging and other trademark-infringing material. These new trends are confirmed with available data that report a significant growth of trademark infringing packaging, labels and holograms.

Source: WCO (2014), "Section 3. IPR, health and safety", in WCO (2014), Illicit Trade Report: 2013, www.wcoomd.org/-/media/wco/public/global/pdf/topics/enforcement-and-compliance/activities-and-programmes/illicit-trade-report/illicit-2013-_-en_lr2.pdf?db=web; OECD/EUIPO (2016), *Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact*, http://dx.doi.org/10.1787/9789264252653-en.

The complexity of distribution networks reflects to the extensive use of in-transit operations. An analysis of counterfeit and pirated imports into the European Union identified a set of important intermediary transit points (OECD/EUIPO, 2016). Some of these – such as Hong Kong, China and Singapore – are important hubs of international trade in general. Other transit points include economies with weak governance or with a strong presence of organised criminal or even terrorist activity. The analysis shows significant changes from year to year, as traffickers exploit new governance gaps. This reflects the ability of counterfeiters and criminal networks to quickly identify weak points and gaps and consequently leverage opportunities for subterfuge.

The in-transit operations are generally located in special economic zones which governments have created to stimulate foreign investment and exports. The zones, commonly referred to as free trade zone (FTZs), are designated areas that lie outside the customs jurisdiction in the economies concerned and are not subject to customs duties or most other customs procedures that would otherwise apply to imported merchandise (OECD 2008). Such zones range in size from single warehouses to massive complexes comprising thousands of businesses, and even whole harbours. Permitted activities can include the storing, assembling, packaging and manufacturing of goods, principally for export.

The number and importance of these zones have grown significantly over time. In 1970, 30 countries had 80 zones with exports totalling USD 6 billion (FATF, 2010). The number has now grown to over 3 000 zones in 135 countries. The zones have a significant economic impact, accounting for over 68 million direct jobs and over USD 500 billion of direct trade-related value added. In addition to customs benefits, the zones can provide other incentives to investors, including tax-free advantages and free capital movements (Box 1.2).

Box 1.2. Profile of Jebel Ali Free Trade Zone

The Jebel Ali Free Trade Zone (Jafza) in Dubai was created in 1985. It is currently operated by DP World, which is a publicly traded company specialising in marine terminal management. The zone has grown from a small operation of 19 companies into a business community of over 7 000 companies from more than 100 countries, employing over 144 000 workers. It accounts for more than 32% of the United Arab Emirates' foreign direct investment, and more than 50% of Dubai's exports. For investors, location in the zone offers:

- 100% foreign ownership
- 0% corporate tax for 50 years (a concession that is renewable)
- no restrictions on capital repatriation
- 0% import or re-export duties
- 0% personal income tax
- no currency restrictions
- no restriction on foreign talent or employees
- ability to mortgage premises to a bank or financing company
- onsite customs.

In order to form a company within the zone, investors are required to choose between i) a Free Zone Establishment, which is essentially a limited liability company (LLC), with one shareholder; ii) a Free Zone Company, which is an LLC with up to 50 shareholders; iii) a Public Listed Company, which is an LLC which could offer shares to the public; or iv) a branch of a company, which is 100% owned by its corporate parent (which is located outside the zone) and bears its name. Operating licences are required, their nature depending on the type of activities to be carried out.

Sources: See http://jafza.ae/about-us/history-vision-promise/#gs.wxoBk04Jafza, http://jafza.ae/about-us/why-dubai-why-jafza/#gs.rTFoRIM and http://web.dpworld.com/about-dp-world/.

One of the key developments over the past several decades has been the growing number of privately owned, developed and operated FTZs worldwide (FIAS, 2008). The FIAS study indicates that 62% of the 2 301 zones in developing and transition countries that were analysed in 2008 were developed and operated by the private sector, compared with less than 25% in the 1980s. According to the study, the rise in the role of the private sector reflects the fact that such facilities can be profitably operated on the part of developers, which can reduce the burden such zones place on government resources.

The characteristics of these zones are as attractive to organised crime and counterfeiters as they are to legitimate traders. The evidence that free trade zones are misused by counterfeiters has been growing over the past years (Box 1.3; WCO, 2016). The particular benefits of transhipment to counterfeiters and criminal elements include the following, each of which is discussed in turn below:

- the capacity to obscure the real origin of cargoes
- the ability to manipulate counterfeit products
- the light regulation of zone businesses.

The real origin of cargoes can be easily obscured

Country of origin deception may be needed to undermine the targeting systems used by law enforcement to target counterfeit products (UNICRI, 2011). To this end, counterfeiters can divert cargos several times in order to pass through different transit points. In the process, fraudulent or misleading documentation can be generated to hide the true nature of operations from law enforcement. Zones provide a low-cost vehicle for doing this as customs inspections are generally absent and items can be moved into and out of zones duty-free.

Box 1.3. Examples of in-transit intellectual property activities

Evidence of IP in-transit issues has been documented in a number of reports in recent years. The WCO, for example reported on a number of shipments from China in 2015 that made in-transit stops on their way to final markets. This included counterfeit toys shipped through Ukraine to Russia and three containers of personal electrical items (including curling irons and hair dryers) intercepted by Uruguay on their way to Paraguay. In Singapore, customs detained a consignment suspected to contain trademark-infringing hard disk drives and anti-virus software product keys. Following up on this information, the police conducted an operation at the importer's storage premises, finding more than 243 000 trademark-infringing goods, including hard disk drives, mobile phones and accessories, memory cards and computer software product keys; the products, which were seized, had an estimated street value of about SGD 11 million (USD 7.9 million / EUR 7 million).

Spanish customs seized 29,000 bottles of counterfeit shampoo in 2015. In addition, 200 000 empty bottles and production materials were seized, with a total value of over EUR 1.2 million. The Spanish authorities had received indications that the suspected product was arriving from the United Arab Emirates via the Netherlands, and was destined for a warehouse in Spain. Once the investigations had been initiated, Spanish officials were able to verify that the Spanish company was a real business, with the capacity to manufacture and distribute fake products. In order to make their activity seem legal, the suspects had set up a company in Spain and several others abroad (in the United Arab Emirates and Cyprus), with a view towards dispersing their activities in order not to draw attention to their business. The legally declared activity of the Spanish company was the wholesaling of dress accessories.

Source: WCO (2016), "Section 3. IPR, health and safety", in *Illicit Trade Report: 2015*, www.wcoomd.org/-/media/wco/public/global/pdf/topics/enforcement-and-compliance/activities-and-programmes/illicit-trade-report/itr-2015-en.pdf?db=web

Counterfeit products can be manipulated

Counterfeit products can be brought into zones with relative impunity, and then be manipulated to facilitate shipments to end markets. This could include carrying out counterfeiting operations, through, for example, illegally relabelling an item with a protected trademark. It could also include breaking down cargoes into a series of smaller shipments so as to lower suspicion and, if intercepted, lower the risk of a rights holder taking action. Counterfeit products could also be reshipped in containers with a large number of genuine items, so as to complicate law enforcement targeting schemes.

Zone businesses are only lightly regulated

The establishment and operation of companies in zones are often not subject to the same regulatory oversight as companies in the rest of the jurisdictions concerned, which can make it easier for zone users involved in criminal activities to support their illegal

operations. Most zone authorities, for example, operate separate company formation services that differ from those that exist in the rest of the jurisdiction, and market the ease of setting up a legal entity in a zone to attract business (FATF, 2010). Many zone authorities request little or no ownership information from the companies interested in setting up in the zone. As a result, it is simpler for legal entities to set up zones and hide the name(s) of the true beneficial owners. The possible lack of regulations governing money laundering would also benefit criminal elements. Finally, the situation is further affected by a lack of co-operation and co-ordination between private zone operators and customs officials, and the relaxed oversight by competent domestic authorities (FATF, 2010).

What are provenance economies?

The difficulty of determining whether a given economy produces counterfeit goods, or is a point of transit, has resulted in the coining of the term "provenance economy". This term was used in the OECD-EUIPO report (2016) following the OECD methodology developed in 2008.

A provenance economy is an economy detected and registered by a reporting customs agency as a source of an item that has been intercepted in violation of an IP right, whatever the amount or value concerned. Put differently, a provenance economy refers to both those economies of origin where the actual production of infringing goods is taking place, as well as those economies that function as ports of transit through which infringing goods pass on route to the destination economy.[2]

Building on the OECD-EUIPO study, this report analyses which important provenance economies are more likely to be producers of infringing goods, and which are more likely to be transit points. This is done for the main product categories that suffer from counterfeiting.

Importantly, the quantitative exercise presented in this report is not a straightforward task, since it refers to clandestine operations for which little robust data are available. The methodological framework presented below therefore necessarily relies on a set of assumptions and limitations. For transparency reasons, all these assumptions and data limitations are clearly spelt out in the presentation of the framework; links to relevant literature and evidence that supports them are also provided.

How to map the real routes of trade in fake goods?

Information on the magnitude, scope and trends of counterfeit and pirated trade is critical for understanding the nature of the problems being faced and how the situation is evolving. Information is also essential for designing and implementing effective policies and measures to combat illicit operations. In response to this problem, the OECD embarked on this project to "chart" the routes in trade in fakes, to determine the main producers of fakes, and to identify the key transit points.

The identification of the key producing economies and transit points for counterfeit and pirated goods performed in this report is done at the industry level. The industry classification used is the 96 two-digit product modules included in the Harmonized System (HS), an international commodity classification system developed and maintained by the World Customs Organization (WCO).[3] A complete description of the HS product categories can be found in Annex B.

From the 96 two-digit product modules available in the HS commodity classification system, 10 product categories have been selected and constitute the focus of this study (Table 1.2). The selection was based on two criteria. First, these product categories were identified in OECD-EUIPO (2016) as the most sensitive to global counterfeiting and piracy; that is they have a high General Trade Related Index of Counterfeiting (GTRIC-p). Second, data on the industrial activity of these product categories are of sufficient quality to provide robust information on potential producing economies.

Table 1.2 lists the ten selected product categories and the estimated value of global trade in counterfeit goods for each of them, both in absolute (USD billion) and relative terms (% of world imports within the product category). This approach has two advantages. First, the product categories together constitute 63% of the global trade value of counterfeit and pirated products estimated in the 2016 OECD-EUIPO report (USD 284 billion of the global estimate of USD 461 billion). Second, the scope of goods studied is very wide, ranging from foodstuff, pharmaceuticals, common consumer goods and luxury products to business-to-business goods.

Table 1.2. Estimated value of global trade in counterfeit goods, 2013

Product category	Value in USD billion (EUR billion)	% of world imports
Foodstuff (15/21)	11.90 (8.72)	1.2%
Pharmaceuticals (30)	16.20 (11.87)	3.3%
Perfumery and cosmetics (33)	5.25 (3.85)	4.7%
Articles of leather, handbags (42)	8.54 (6.26)	11.5%
Clothing and textile fabrics (60/61)	27.70 (20.30)	11.0%
Footwear (64)	13.30 (9.75)	10.5%
Jewellery (71)	40.90 (29.97)	4.8%
Electronics and electrical equipment (85)	121.00 (88.66)	5.3%
Optical, photographic and medical apparatus (90)	29.20 (21.40)	5.2%
Toys and games (95)	9.72 (7.12)	11.0%

Note: The estimated value of global trade in counterfeit and pirated goods for each product category reported in this table is based on the General Trade Related Index (GTRIC) methodology developed in OECD-EUIPO (2016). For each category, the corresponding HS code is indicated in brackets.

The mapping method

The determination of the main producer economies of fakes and the key transit points relies on statistical data on seizures of counterfeit and pirated goods, complemented with international trade statistics and industrial activity data. A more detailed description of these data and of all the related limitations is presented in Annex A.

A quantitative methodology draws on these data to determine the producers and transit points in trade of fake goods in the following ten product categories: foodstuff; pharmaceuticals; perfumery and cosmetics; articles of leather and handbags; clothing and textile fabrics; footwear; jewellery; electronics and electrical equipment; optical, photographic and medical apparatus; toys and games.

For each product category the methodology first determines the top economies of provenance for counterfeit goods in trade in this product. It does not distinguish whether

these economies are producers or transit points of fake goods in these categories, however. The methodology relies on two sets of statistical filters to distinguish producers from transit points (see Annex B for more details):[4]

1. A filter that looks at the production capacities of a given economy in a given sector. Intuitively, production of each good relies on certain skills or resources and also exhibits certain returns-to-scale properties. Consequently, economies tend to specialise in production of certain goods. We assume that only economies that have sufficient productive capacity for legitimate goods are able to leverage this capacity to produce counterfeits.

2. A filter that checks the degree to which a given economy specialises in re-export of a given product, e.g. through development of an advanced logistical infrastructure, or by virtue of its convenient geographical location. Where these factors facilitate transit of genuine products, they can also facilitate transit of fake products in the same categories.

Both filters are applied to distinguish the producing economies from the key potential transit points for each analysed industry. Intuitively, if an economy is *not* a significant producer of a fake good and at the same time is a large re-exporter of this good in legitimate trade, then it is likely to be a transit point. Similarly, economies that are identified as provenance economies that are significant producers of a given good but are insignificant re-exporters are likely to be producers of these fake products.

These filters are well grounded in the economic trade literature and are used to assess the specialisation and complexity of a given economy (Hidalgo and Hausmann 2009 and 2011).

This exercise results in a list of producers and a list of transit points. Together with the information on the place of seizure, this allows maps of trade in fake goods to be developed for each product category, showing the key producer economies, main transit points and main destinations.

Box 1.4. Data limitations and future needs

The analysis carried out in this study has highlighted some measurement and data-related issues. Two in particular stand out:

1. Even though the information on counterfeit and pirated trade has improved significantly in recent years, more could be done to improve and expand information on this phenomenon. This is particularly important for non-OECD economies, where the available information is imprecise and/or incomplete. Adoption of measurement techniques and data collection methods that are currently employed in the OECD countries could help to further expand the geographical scope of the analysis.

2. Data on industrial production are relatively old and incomplete for many sectors and economies. Moreover, for those cases where data are available, they are often reported using different reporting schemes. Consequently, the analysis is done at a relatively high level of aggregation (i.e. two-digit level), which reduces the precision of matches between both datasets. Further research on measurement techniques and data collection methods could help to further refine the analysis.

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Chapter 2. An overview of ten industry sectors

This chapter provides the findings of the investigation into the routes and means through which fake products are transported from producer economies to the final markets. It summarises the intellectual property intensity and propensity to be faked for ten key product categories, maps out the main producer economies and transit points, and reveals the main transport modes and shipment sizes.

Introduction

The complex network of trade routes for counterfeits was analysed for ten main product categories. The ten categories identified span a wide-range of IP-intense, tradable goods ranging from consumer products like cosmetics and confectionary products (including shampoo and candy bars) to business to business (b2b) products, such as spare parts and micro-processors. Altogether, the trade in fakes in these ten sectors accounts for USD 284 billion (EUR 208 billion), more than half of the global estimated trade in fakes.

Each product category is briefly reviewed, with examples of what goods in that particular sector are most likely to be counterfeited. For each of the ten sectors, the top provenance economies are highlighted. A quantitative analysis that cross-references provenance economies with production and trade statistics splits these provenance economies into two main categories: i) likely transit points and ii) likely producers of fakes. The identification of source and transit economies provides the information that is used to map the trade routes for fakes for each product category.

Trade routes for fake foodstuff

Summary

Globally, China, India and several other smaller Asian economies (Pakistan, Indonesia, Viet Nam and Thailand) are the main producers of counterfeit foodstuff. They export directly to the US, the EU, Japan, Western Africa (Benin, Senegal, Nigeria), Northern Africa (Morocco, Algeria) and Yemen; or indirectly, through Saudi Arabia, the UAE and Yemen, to other Gulf region economies.

Regionally, Turkey is a relatively significant producer of counterfeit food products, and exports them to the EU countries and to Serbia, Yemen, or (indirectly) to Saudi Arabia. Ethiopia and Kenya are also identified as producers of fake food products for export to Saudi Arabia and Yemen.

Most counterfeit foodstuff is shipped in large quantity shipments, either in containers by sea or by air.

Overview of foodstuff IP intensity and counterfeiting

The foodstuff industry covers all Harmonized System (HS) product categories related to manufactured and non-manufactured food products, including dairy produce, eggs, honey and other products of animal origin (HS 04 and HS 05); vegetable products (HS 06 to 15); preparations of meat, fish or crustaceans (HS 16); sugars and sugar confectionery (HS 17); cocoa and cocoa preparations (HS 18); preparations of cereals, flour, starch or milk, and pastry cooks' products (HS 19); preparations of vegetables, fruit, nuts or other parts of plants (HS 20); and miscellaneous edible preparations (HS 21).

In 2013, the global trade value of this industry was USD 1 010 billion, around 4.9% of total world trade in that year.

The foodstuff industry is relatively intense in terms of intellectual property rights. According to the data provided by the World Intellectual Property Office (WIPO, 2017), the number of trademark applications for the industry was 266 581 in 2013,[5] around 6.8%

of all world trademark applications registered that year. This made the foodstuff industry the third-most intense in terms of IP, with over 45 industries registered in the Nice product classification.[6]

The high trademark intensity of the foodstuff industry and its high degree of integration with the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit food products was worth up to USD 12 billion (EUR 8.7 billion) in 2013. This represents more than 1.2% of the total trade in food products, and places the foodstuff industry in the top 15 industries to be most affected by global counterfeiting and piracy in terms of value (OECD-EUIPO, 2016).

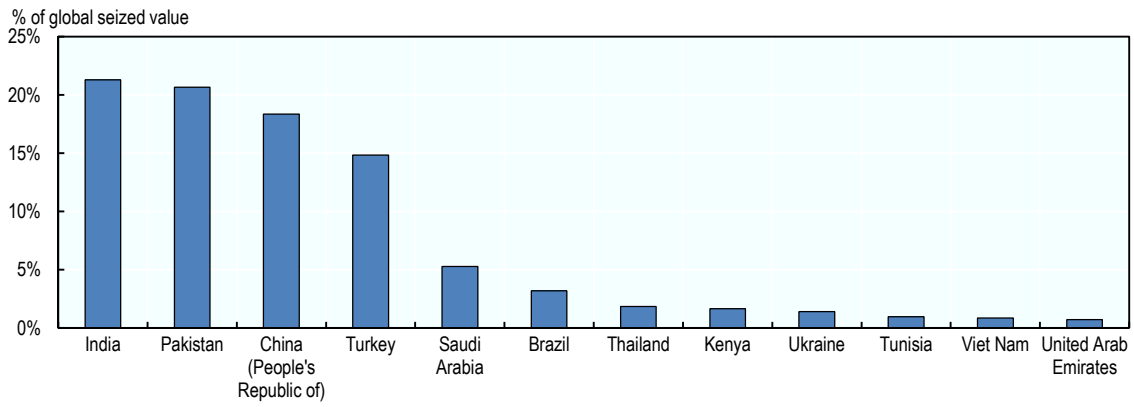
There are various examples of counterfeit food products. The most commons seizures concern counterfeit manufactured food products, such as cookies, sweets and ice cream. There are also seizures counterfeit non-manufactured food products that are IP-infringing, such as fruit (e.g. watermelon, strawberries and apples), meat and fish (e.g. chicken, beef, tuna), and tea and coffee.

Counterfeit and pirated foodstuff, particularly manufactured food products, can have adverse effects on the health and safety of consumers. Counterfeiters have limited or no interest in ensuring the proper quality or safety of their products. However, because data are not collected systematically, most evidence on negative health and safety effects is anecdotal, and more work is needed to measure the effects more broadly.

Provenance and destination economies

According to the data gathered in the OECD-EUIPO database on global customs seizures, India, Pakistan, China and Turkey were the main provenance economies of counterfeit manufactured and non-manufactured food products worldwide between 2011 and 2013 (Figure 2.1). However, the data also indicate that a number of smaller provenance economies of counterfeit foodstuff can be found on almost all continents. As the scope of this analysis is on trade, it does not include domestically produced and consumed counterfeit products, and there are currently no datasets for most developing countries that could be used to analyse this phenomenon.

Figure 2.1. Top provenance economies for counterfeit foodstuff, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529217

Note: The EU members (i.e. Italy, Germany and Belgium) are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The general trade-related index of counterfeiting for economies (GTRIC-e) for food products compares the customs seizures intensities of infringing food products with licit trade intensities for each provenance economy. GTRIC-e confirms that counterfeit manufactured and non-manufactured food products are most likely to be exported around the world from China, India and some smaller Asian economies (Pakistan, Indonesia, Viet Nam, Thailand); several Middle East economies (United Arab Emirates, Saudi Arabia, Iran); Turkey; and some African economies (Egypt, Ethiopia, Kenya) (Table 2.1).

Table 2.1. Relative likelihood of an economy to be a source of fake foodstuff

GTRIC-e for foodstuff; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
United Arab Emirates	0.677
Turkey	0.608
Egypt	0.552
Ethiopia	0.488
Saudi Arabia	0.408
Iran	0.384
Kenya	0.345
India	0.332
Pakistan	0.281
Indonesia	0.256
Viet Nam	0.241
Thailand	0.233

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

China, India, Turkey, Egypt and the United Arab Emirates are also the most likely provenance economies for imports of counterfeit food products into the EU (Table 2.2). However, the list of top provenance economies specific to the EU also includes Singapore, Tunisia, Russia, and Israel. The smaller Asian economies listed as important sources of world imports of counterfeit foodstuff, as well as Ethiopia and Kenya (Table 2.1), are most likely gateways for the African continent.

Table 2.2. Relative likelihood of an economy to be a source of fake foodstuff imported into the EU

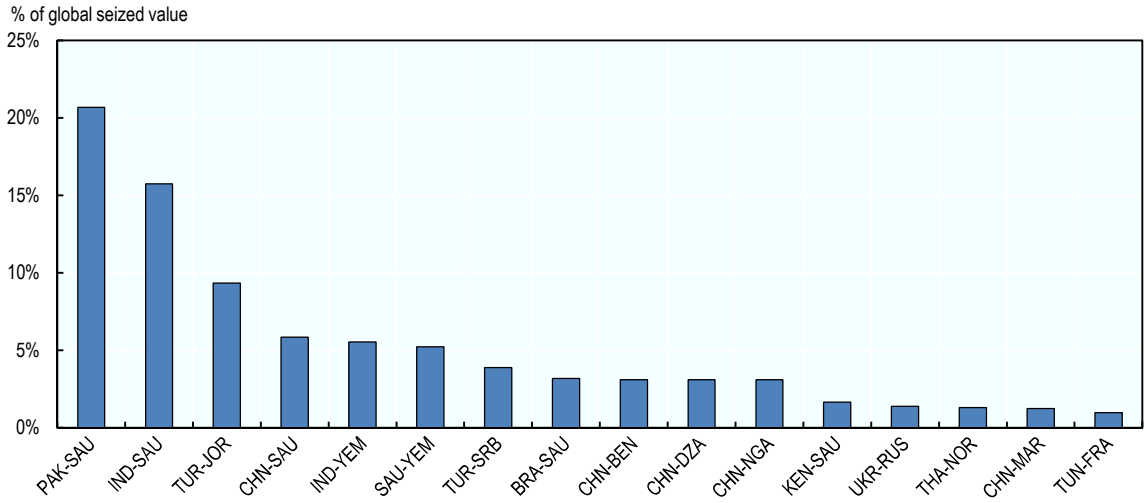
GTRIC-e for foodstuff; average 2011-2013

Economy	GTRIC UE
Egypt	1.000
China (People's Republic of)	0.833
Turkey	0.782
Tunisia	0.761
United Arab Emirates	0.661
Singapore	0.269
Russia	0.248
India	0.231
Israel	0.216

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

While provenance economies of counterfeit food products can be clearly identified, the trade routes of these products are much more complex and diverse. Descriptive statistics on the most intensive trade routes (Figure 2.2) indicate that a large share of counterfeit manufactured and non-manufactured food products are exported from Asian economies (e.g. China, India or Pakistan), Turkey and some African economies to European economies and Middle Eastern economies (e.g. Saudi Arabia, United Arab Emirates or Yemen). Large trade flows of counterfeit food products are also registered from these Middle Eastern countries to EU member countries and the US.

Figure 2.1. Top provenance-destination economies for counterfeit foodstuff, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529236

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the indices on relative comparative advantage for production (RCAP-e) and relative comparative advantage for being a transit point (RCAT-e) confirms the patterns suggested in the descriptive statistics on the most intensive trade routes for counterfeit foodstuff (see Annex B for methodology, and Annex C for complete lists of RCAT-e and RCAP-e indices). China, India and other smaller Asian economies (Pakistan, Indonesia, Viet Nam and Thailand) appear to be producers of counterfeit food products, which they appear to export directly to the US, the EU, Japan, West Africa (Benin, Senegal, Nigeria), North Africa (Morocco, Algeria) and Yemen; and indirectly through Saudi Arabia (see Table 2.3).

Turkey also seems to be a notable producer of counterfeit food products, shipping them either directly to EU countries, Serbia, Yemen, and (indirectly) to Saudi Arabia. Finally, Ethiopia and Kenya are also identified as producers, and export their counterfeit food products to Saudi Arabia and Yemen.

Table 2.3.Economies producing counterfeit foodstuff, 2011-2013

Producing economy	Destinations	Transport mode
China	EU	Road
	US	Unknown
	Japan	Air
	Chile	Sea
	Western Africa (Benin, Senegal, Nigeria)	Sea
	Northern Africa (Morocco, Algeria)	Sea
	Saudi Arabia *[transit point]*	Air - sea
	Yemen *[transit point]*	Air - sea
Turkey	EU	Road
	Serbia	Road
	Saudi Arabia *[transit point]*	Air - sea
	Yemen *[transit point]*	Air - sea
India, Pakistan, Indonesia, Viet Nam and Thailand	Saudi Arabia *[transit point]*	Air - sea
	Yemen *[transit point]*	Air - sea
Ethiopia and Kenya	Saudi Arabia *[transit point]*	Sea
	Yemen *[transit point]*	Sea

Saudi Arabia is one of the main identifiable transit points for counterfeit foodstuff in global trade (Table 2.4). In addition, while Yemen is an additional provenance economy for counterfeit food products and descriptive statistics suggest that it is an important transit point; available indicators cannot confirm this clam with a high degree of certainty.

Finally, the RCAP-e and RCAT-e indicators do not allow the precise role of the United Arab Emirates and Iran to be clearly defined; both are listed among the top provenance economies for counterfeit food products according to the GTRIC-e indices. In

addition, in the case they are transit points, the available data do not allow identifying potential producers that export fake foodstuff to these economies. Thus, their position in the global trade of counterfeit foodstuff remains undetermined.

Table 2.4. Key transit points for counterfeit foodstuff, 2011-2013

Producing economy	Transit point	Destinations	Transport mode from transit to destination
China	Saudi Arabia	Yemen *[transit point]*	Road
Turkey		Qatar	Road
India			
Pakistan			
Viet Nam			
Thailand			
Ethiopia			
Kenya			
Saudi Arabia *[transit point]*	Yemen	?	
China			
Turkey			
India			
Pakistan			
Viet Nam			
Thailand			
Ethiopia			
Kenya			

Notes: The positions of the United Arab Emirates and Iran in the global trade of counterfeit foodstuff remain undetermined. The United Arab Emirates exports counterfeit foodstuff to Saudi Arabia, Morocco and South Sudan. Iran exports counterfeit food products to Saudi Arabia. In both cases, the RCAP-e and RCAT-e indicators do not specify if they are producers or not.

Transport modes and size of shipments

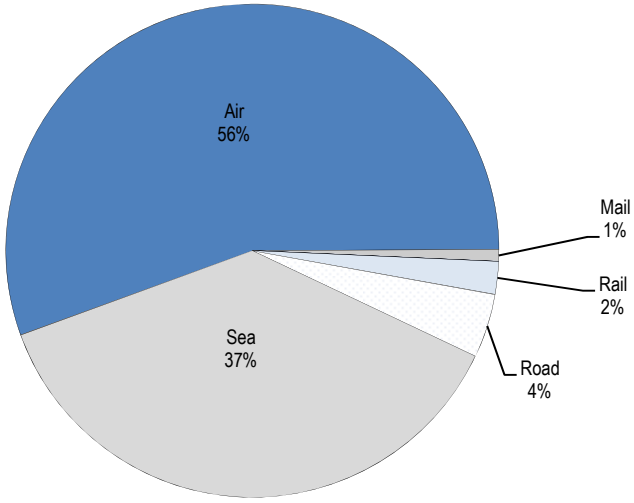
The main transport modes in the global trade of counterfeit foodstuff for the period 2011 to 2013 were air and sea (Figure 2.3). Shipments of counterfeit food products by air represented 56% of the total number of customs seizures registered in the database, and 37% for sea. Road shipments came third, representing around 4% of all customs seizures of infringing food products.

A list of the main transport modes used from producing economy to transit points, and from transit points to destination economy, is provided in Tables 2.3 and 2.4. Sea and/or air transport appear to dominate in almost all the most intensive trade routes for counterfeit food products. The only exceptions are shipments from Turkey and China to Europe, and those between Middle Eastern economies, which are done by road.

Individual shipments of counterfeit food products appear to be very large, with almost all customs seizures registered in the database reporting more than 10 items per shipment (Figure 2.4).

Figure 2.3. Conveyance methods for counterfeit foodstuff, 2011-2013

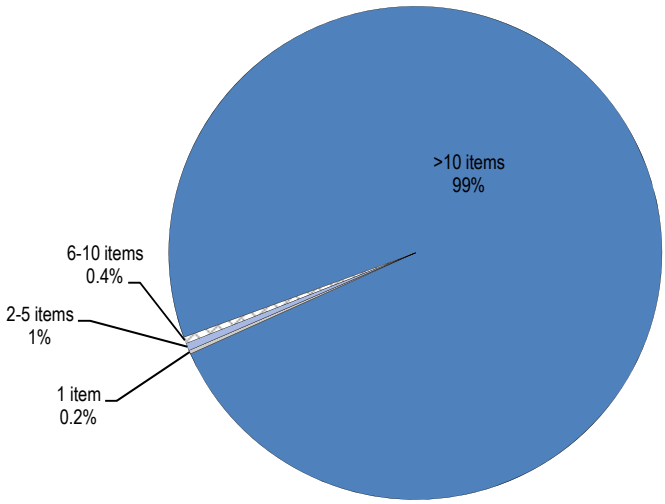
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529255

Figure 2.4. Size of shipments of counterfeit foodstuff, 2011-2013

As a percentage of total seizures



Statlink: http://dx.doi.org/10.1787/888933529274

Trade routes for fake pharmaceutical products

Summary

India and China are the largest identified producers of counterfeit pharmaceuticals. They are shipped all around the globe, with a special focus on African economies, Europe and the US. In addition, Singapore is also indicated as a potential producer of fake pharmaceuticals.

Hong Kong (China) is one of the most important transit points for counterfeit pharmaceuticals, mainly exporting them by post to the US, Europe, Japan and some South American economies in small parcels.

Other relevant transit points for fake pharmaceuticals include Yemen, the United Arab Emirates and Iran. From these countries, fake pharmaceuticals are reshipped either to African economies such as Egypt or Ethiopia by air and sea, or to Europe and the US by mail.

Overview of IP intensity and counterfeiting

The pharmaceutical industry refers to the HS 30 product category (Annex B). This category includes notably medicines, whether or not in measured doses or packed for retail sale; and other pharmaceutical goods, such as sterile surgical catgut, suture materials, first aid boxes and kits, and dental cements and fillings.

In 2013, the global trade value of pharmaceutical products was USD 486 billion, around 2.4% of total world trade in that year.

The pharmaceutical industry is relatively IP intense. According to the data provided by WIPO (WIPO, 2017), the number of trademark applications for the industry was 182 296 in 2013,[7] around 4.7% of all world trademark applications registered that year. The number of patent applications for the pharmaceutical sector was 79 278, around 3.8% of all world patent applications. This made the pharmaceutical industry the 6th most intense in terms of trademarks out of 45 industries registered in the Nice product classification, and the 8th in terms of patents, out of the 35 types of technologies recorded by the WIPO.

The high IP-intensity of the pharmaceutical industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit pharmaceuticals was up to USD 16.2 billion (EUR 11.9 billion) in 2013. This represents more than 3.3% of total trade in pharmaceutical products, and makes the pharmaceutical industry the eighth most affected by global counterfeiting and piracy in terms of value.

Examples of counterfeit pharmaceutical products recorded in the database of customs seizures developed for the OECD/EUIPO (2016) study are various and striking. Over the period 2011-2013, customs authorities worldwide notably recorded seizures of counterfeit medicines for the treatment of malaria, HIV/AIDS and cancer. These pose a very serious threat to consumer health.

Two important issues should be kept in mind when analysing the issue of fake pharmaceuticals. First, for the purpose of this report the term "counterfeit" refers only to

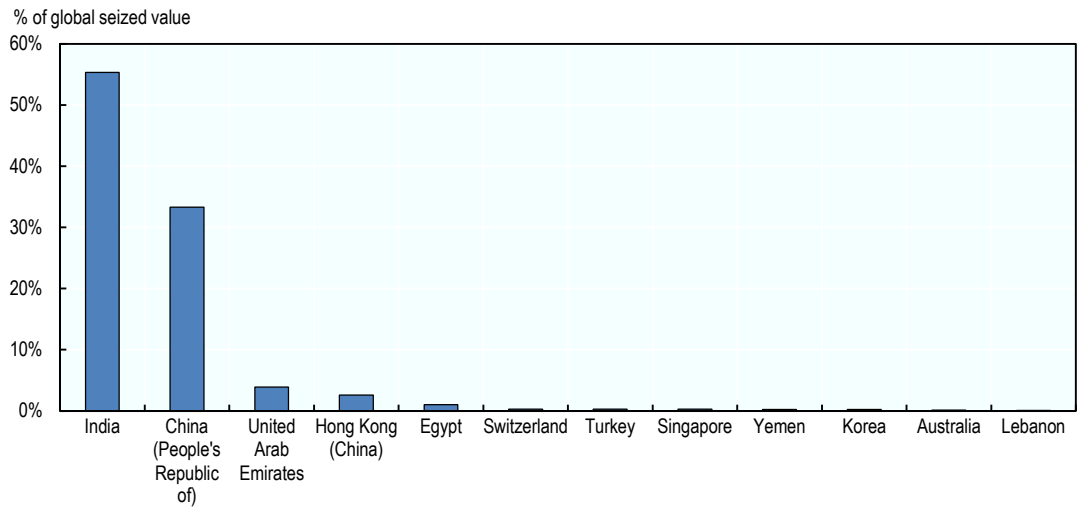
trademark infringing pharmaceuticals. However, the existing literature recognises other types of illicit pharmaceuticals, sometimes called "fake" (OECD, 2016). For example the World Health Organization uses the term "counterfeit pharmaceuticals" for products without active ingredients, products with incorrect quantities of active ingredients, and products with the wrong ingredients etc. that do not necessarily infringe the trademarks (WHO, 2015).

Second, beyond the significant adverse economic consequences of the illicit trade in pharmaceutical counterfeiting, several additional adverse impacts must also be taken into account. It is important to fully recognise the environmental, social, public health and fiscal implications, including serious, adverse effects on patient health and safety (OECD, 2008).

Provenance and destination economies

According to the data gathered in the OECD-EUIPO database on global customs seizures, between 2011 and 2013, India was by far the main provenance economy of counterfeit pharmaceuticals, being the origin of 55% of the total seized value of counterfeit pharmaceutical products worldwide (Figure 2.5). It was followed by China (33%), the United Arab Emirates (4%) and Hong Kong (China) (3%).

Figure 2.5. Top provenance economies for counterfeit pharmaceuticals, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529293

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for pharmaceutical products, which compare customs seizures intensities of infringing pharmaceuticals with licit trade intensities for each provenance economy, confirms that India, China and Hong Kong (China) are the economies most likely to export counterfeit pharmaceuticals (Table 2.5). They are followed by some Middle Eastern economies (Yemen, Iran, Lebanon and the United Arab Emirates), as well as Singapore and Albania.

Table 2.5. Relative likelihood of an economy to be a source of fake pharmaceutical products

GTRIC-e for pharmaceuticals; average 2011-2013

Economy	GTRIC world
India	1.000
China (People's Republic of)	0.938
Hong Kong (China)	0.788
Yemen	0.503
Iran	0.461
Singapore	0.391
Albania	0.334
Lebanon	0.233
United Arab Emirates	0.232
Belize	0.226

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

An almost identical list of provenance economies has been identified for imports of counterfeit pharmaceutical products by the EU (Table 2.6). The list of top provenance economies specific to the EU also includes the Philippines, Thailand and Turkey; but does not include Yemen or the United Arab Emirates.

Table 2.6. Relative likelihood of an economy to be a source of fake pharmaceuticals imported into the EU

GTRIC-e for pharmaceuticals to the EU; average 2011-2013

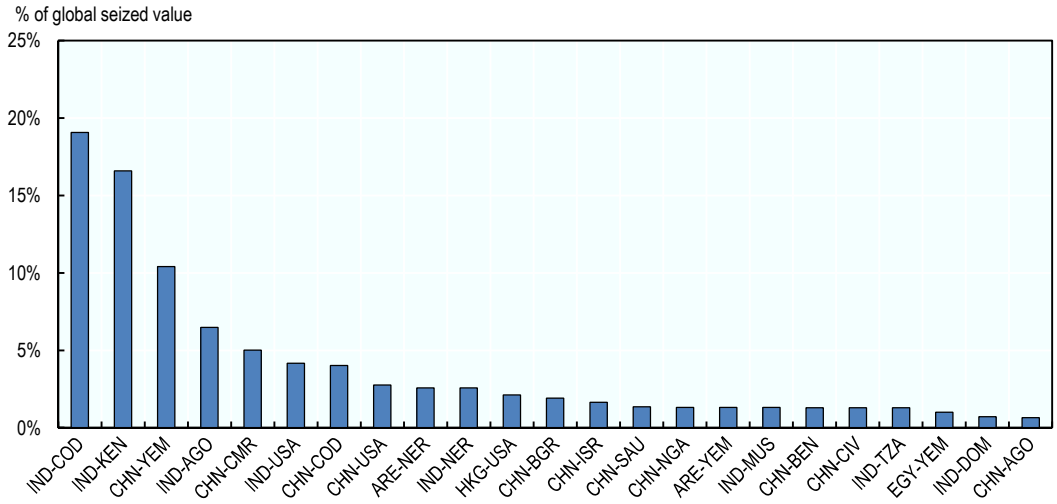
Economy	GTRIC UE
Hong Kong (China)	1.000
India	0.737
China (People's Republic of)	0.697
Singapore	0.440
Philippines	0.262
Switzerland	0.234
Iran	0.229
Thailand	0.111
Turkey	0.099
Lebanon	0.098

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

Descriptive statistics on the most intensive trade routes presented in Figure 2.6 indicate that the largest share of counterfeit pharmaceuticals are exported from India and China to African economies (e.g. Democratic Republic of the Congo, Kenya, Niger, Angola, Nigeria, Cameroun, Côte d'Ivoire, Benin, Tanzania). Large trade flows of

counterfeit pharmaceutical products are also registered from India, China and Hong Kong (China) to the US and European economies; as well as from Middle Eastern countries, such as the United Arab Emirates, to African economies or to countries located in the Middle East.

Figure 2.6. Top provenance-destination economies for counterfeit pharmaceuticals, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529312

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices confirms the above results (See Annex C for complete lists of RCAT-e and RCAP-e indices). China and India appear to be the largest producers of counterfeit pharmaceutical products (Table 2.7), which are exported all around the globe, with a special focus on African economies, Europe and the US. Singapore is also indicated as an important producer of counterfeit pharmaceuticals.

Table 2.7. Producers of counterfeit pharmaceuticals, 2011-2013

Producing economy	Destinations	Transport mode
India	Africa (i.e. Democratic Republic of the Congo, Kenya, Angola, Niger, Tanzania, Mauritius, Cameroon, Madagascar)	Sea
	Europe	Mail
	US	Mail
	Canada	Mail
	South America (Belize, Guyana, Uruguay, Mexico, Suriname)	Air
	The Caribbean (Dominican Republic, Haiti, Jamaica…)	Air
	Saudi Arabia [*transit point*]	Sea - Air - Rail
	Yemen [*transit point*]	Sea - Air
China	Africa (Cameroon, Democratic Republic of the Congo, Nigeria, Benin, Côte d'Ivoire, Angola, Madagascar, South Africa, Morocco)	Sea
	Europe	Mail
	US	Mail - Sea
	Japan	Mail - Air
	Israel	Sea
	Jordan	Sea
	Iraq	Sea
	Saudi Arabia [*transit point*]	Sea - Air - Rail
	Yemen [*transit point*]	Sea - Air
Singapore	EU	Mail
	US	Mail
	Yemen [*transit point*]	Sea

Yemen appears to be an important transit points for counterfeit pharmaceuticals (Table 2.8). It receives the fake pharmaceuticals from India, China and Singapore and re-exports them to African economies, such as Egypt and Ethiopia.

Other Middle Eastern economies, such as the United Arab Emirates and Iran, also appear to be key transit points for counterfeit pharmaceutical products. Fake pharmaceuticals are reshipped from them either to African economies by air and sea, or to Europe and the US by mail. However, it not possible to determine where these fakes originally come from.

Note that the position of another economy in the area, Saudi Arabia, is undetermined. While the descriptive statistics suggest that it may be an important transit point, the RCAP-e and RCAT-e indicators are inconclusive on whether it is a producer or not.

Finally, Hong Kong (China) also appears to be one of the most important key transit points for counterfeit pharmaceuticals, mainly exporting the fakes to the US, Europe, Japan and some South American economies by small postal parcels. It is however not possible to determine where these fakes originate. In addition, based on interviews with customs officials, Switzerland is likely to be a transit country used as an entry point to the

EU, it is not possible to determine where these fakes originally come from to Switzerland due to data shortages.

Table 2.8. Key transit points for counterfeit pharmaceuticals, 2011-2013

Provenance economy	Transit point	Destinations	Transport mode from transit to destination
India China Singapore Saudi Arabia *[transit point]* United Arab Emirates *[transit point]*	Yemen	North and east Africa (Egypt, Ethiopia)	Air
?	Iran	EU	Mail
		US	Mail
?	Hong Kong (China)	EU	Air - Mail
		US	Mail - Air
		South America	Air - Mail
		Japan	Air - Mail - Sea
?	United Arab Emirates	Saudi Arabia *[transit point]*	Road
		Yemen	Road - Air - Sea
		Qatar	Road - Air - Sea
		Western Africa (Niger)	Sea

Notes: Based on interviews with customs officials, Switzerland is likely to be a transit country used as an entry point to the EU The status of Lebanon, which receives fake pharmaceuticals directly from China and India and indirectly from Yemen and United Arab Emirates, is undetermined. The indicators do not reveal if Lebanon is a producer or not.

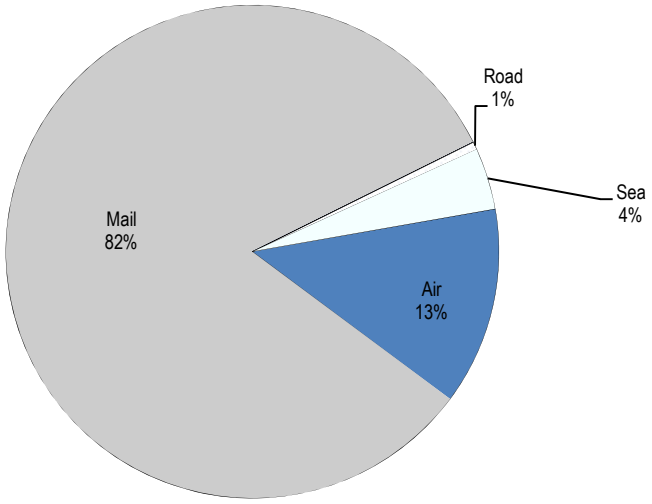
Transport modes and size of shipments

Mail and courier services were the main modes of transport for counterfeit pharmaceuticals (Figure 2.7). More than 80% of seizures of fake pharmaceuticals concerned shipments by mail and express services, followed by air transport (13%) and sea transport (4%).

Correspondingly, shipments of counterfeit pharmaceutical products appear to be large. More than 80% of customs seizures registered in the database report more than 10 items per shipment (Figure 2.8).

Figure 2.7. Conveyance methods for counterfeit pharmaceuticals, 2011-2013

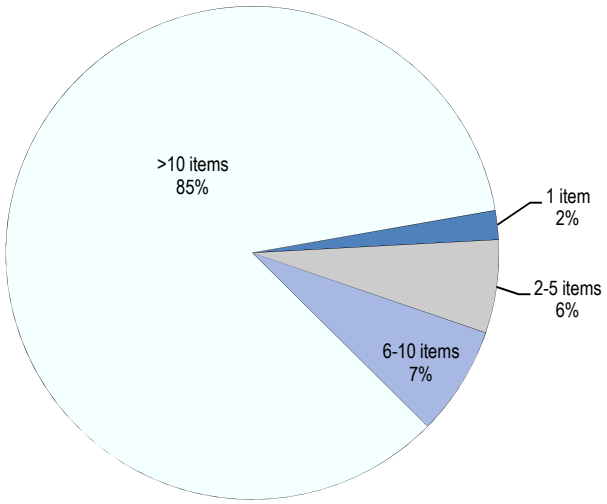
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529331

Figure 2.8. Size of shipments of counterfeit pharmaceuticals, 2011-2013

As a percentage of total seizures.



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Trade routes for fake perfumery and cosmetics

Summary

Generally, China is the key producer of counterfeit perfumes and cosmetics preparations that are shipped throughout the globe. Counterfeit perfumes and cosmetics produced in Malaysia, Thailand, India and Singapore are generally exported to the EU, the US, Saudi Arabia and Kuwait. Finally, Turkey is a regional producer exporting counterfeit perfumery and cosmetics almost exclusively to the EU.

Trade routes for counterfeit perfumery and cosmetics are very complex. Hong Kong (China) is the key transit hub for the fakes produced in China, which are then exported throughout the world. The United Arab Emirates and Kuwait receive counterfeit perfumes and cosmetics mainly from China, and re-export them notably to the EU and to Africa. Regionally, Albania is an important transit point for the fake perfumes and cosmetic on the way from Turkey to the EU.

Fake perfumes and cosmetics produced in China, Malaysia, Thailand, India, and Singapore are shipped to the OECD countries mostly by postal parcels. Shipments to the Middle East and African economies are carried mostly by sea or air. Lastly, counterfeit perfumery and cosmetics exported from Turkey to the EU are transported by road.

Overview of IP intensity and counterfeiting

The perfumery and cosmetics industry refers to the HS 33 product category. In 2013, the global trade value of the industry was USD 111 billion, around 1% of total world trade in that year.

According to the data provided by WIPO (WIPO, 2017), the number of trademark applications for the industry was 134 636 in 2013,[8] around 3.5% of all world trademark applications registered that year. This made the perfumery and cosmetics industry the eighth most intense in terms of trademarks among 45 industries registered in the Nice product classification.

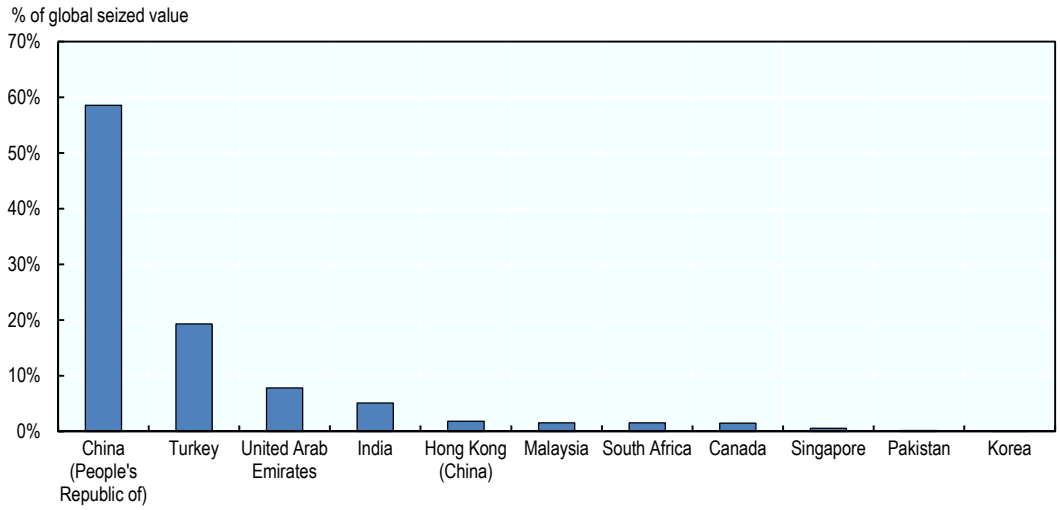
The high IP-intensity of the perfumery and cosmetics industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations in the OECD-EUIPO (2016) study, global trade in counterfeit perfumery and cosmetics was valued at up to USD 5.3 billion (EUR 3.8 billion) in 2013. This represents 4.7% of global trade in perfumes and toilet preparations, and places the industry in the top 15 most affected by global counterfeiting and piracy in terms of value.

There are various examples of counterfeit perfumery and cosmetics recorded in the database of customs seizures. Of particular note over the period 2011-2013 are seizures of counterfeit make-up, creams, aftershaves, shampoos, luxury perfumes, nail sets, and even toothpastes and toothbrushes. In some cases, these fakes can pose a serious health threat to consumers.

Provenance and destination economies

According to the OECD-EUIPO database on global customs seizures, China was by far the largest provenance economy for counterfeit perfumery and cosmetics between 2011 and 2013, being the origin of 59% of the total seized value of counterfeit perfumes and cosmetics preparations worldwide (Figure 2.9). It was followed by Turkey (19%), the United Arab Emirates (8%), India (5%) and Hong Kong (China) (2%).

Figure 2.9. Top provenance economies for counterfeit perfumery and cosmetics, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529369

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for the industry of perfumery and cosmetics compare the customs seizures intensities of infringing perfumes and cosmetic preparations with licit trade intensities for each provenance economy. These confirm that China, Hong Kong (China), the United Arab Emirates and Turkey are the most likely economies to export counterfeit perfumes and cosmetics (Table 2.9). The list also includes some East European economies (Albania, Ukraine, Belarus), a group of Far East Asian economies (Malaysia, Thailand, India, and Singapore), Kuwait and Panama.

Interestingly, the list of top provenance economies for counterfeit perfumes and cosmetics imported into the EU is almost exactly the same as the list for world imports (see Table 2.10). The only exception is the inclusion of Morocco in the top provenance economies, and the exclusion of India.

Table 2.9. Relative likelihood of an economy to be a source of fake cosmetics and perfumery

GTRIC-e for perfumes and cosmetics; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.597
United Arab Emirates	0.374
Turkey	0.372
Ukraine	0.264
Albania	0.217
Singapore	0.141
Kuwait	0.120
Malaysia	0.116
Panama	0.114
Thailand	0.113
Belarus	0.096
India	0.091

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

Table 2.10. Relative likelihood of an economy to be a source of fake perfumery and cosmetics imported into the EU

GTRIC-e for perfumes and cosmetics to the EU; average 2011-2013

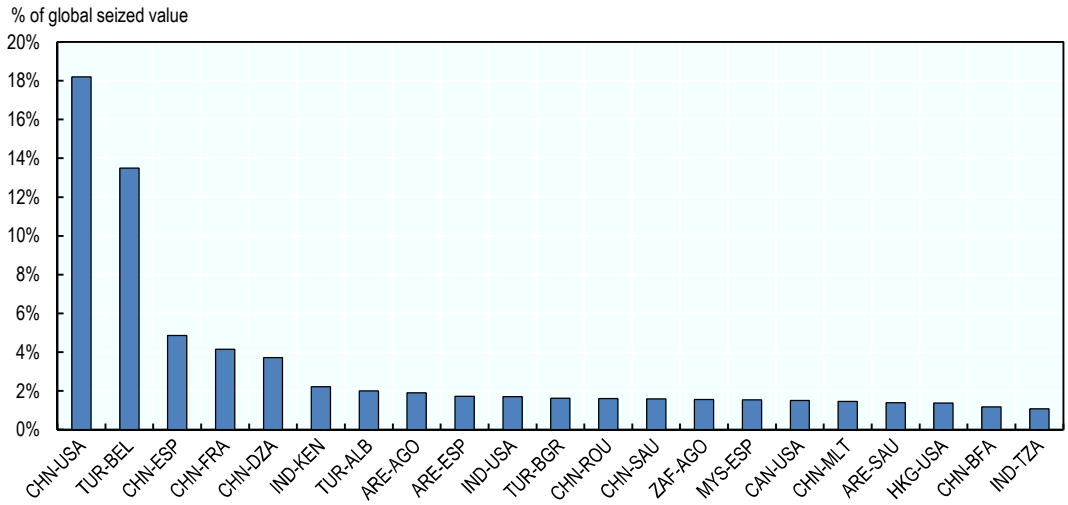
Economy	GTRIC EU
China (People's Republic of)	1.000
Hong Kong (China)	0.626
Turkey	0.409
United Arab Emirates	0.264
Kuwait	0.253
Malaysia	0.171
Singapore	0.164
Ukraine	0.142
Morocco	0.115
Albania	0.112
Thailand	0.111
Belarus	0.073

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

Descriptive statistics on the most intensive trade routes presented in Figure 2.10 indicate that the largest share of counterfeit perfumes and cosmetics are exported from China, India and Hong Kong (China) to the US, and from China and Turkey to member countries and economies of the EU and Southeast Europe (mainly Albania). Large trade

flows of counterfeit perfumery and cosmetics are also registered from China to West and North Africa (e.g. Algeria, Burkina Faso), from India to East Africa (e.g. Kenya, Tanzania) and from the United Arab Emirates to all over the African continent.

Figure 2.10. Top provenance-destination economies for counterfeit perfumes and cosmetics, 2011-2013



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Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates that China, Turkey, India, Malaysia, Thailand and Singapore are important producers of counterfeit perfumery and cosmetics (Table 2.11. See Annex C for complete lists of RCAT-e and RCAP-e indices). Whereas China exports counterfeit perfumes and cosmetics preparations across the globe, the fakes produced by the other Asian economies (Malaysia, Thailand, India and Singapore) are exported more generally to the EU, the US, and Middle East economies, notably Saudi Arabia and Kuwait. Finally, Turkey exports its counterfeit perfumery and cosmetics almost exclusively to the EU, notably using Southeast European economies as transit points.

Table 2.11. Producers of counterfeit perfumery and cosmetics, 2011-2013

Producing economy	Destinations	Transport mode
China	EU	Mail - Sea
	Southeast Europe [*transit point*]	Mai - Road
	US	Mail - Sea
	Canada	Mail - Sea
	Australia and New Zealand	Sea - Air
	Japan	Mail - Sea
	North Africa (Algeria, Morocco, Egypt, Libya)	Sea
	Western Africa (Mauritania, Guinea, Burkina Faso, Nigeria, Cameroon)	Sea
	Central America and the Caribbean (Belize, Dominican Republic, Venezuela)	Sea - Air
	Middle East (Saudi Arabia, Yemen, Kuwait [*transit point*], and Qatar)	Sea
	Hong Kong (China) [*transit point*]	Road
Malaysia and Thailand	EU	Mail - Sea
	US	Mail - Sea
	Saudi Arabia	Sea - Road - Air
	Kuwait [*transit point*]	Sea - Road - Air
India	EU	Mail - Sea
	US	Mail - Sea
	East Africa (Kenya, Mauritius, Tanzania)	Sea
Singapore	EU	Mail - Sea
	US	Mail - Sea
	Saudi Arabia	Sea
Turkey	EU	Mail - Air - Road
	Southeast Europe [*transit point*]	Road

Identifying key transit points by comparing the GTRIC-e and RCAT-e indices reveals the complexity of the trade routes for counterfeit perfumes and cosmetics. Hong Kong (China) appears to be an important hub for the fakes produced in China, which are then exported throughout the world (Table 2.12). The United Arab Emirates and Kuwait receive counterfeit perfumes and cosmetics from China and the smaller producer Asian economies, and re-export them notably to the EU and to Africa. Albania is an important transit point for the fake perfumes and cosmetic preparations received notably from Turkey. They are then re-exported across the EU.

Table 2.12. Key transit points for counterfeit perfumery and cosmetics, 2011-2013

Provenance economy	Transit point	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	EU	Mail - Sea
		Southeast Europe [*transit point*]	?
		US	Mail
		Australia	Mail
		Japan	Air - Sea
		Central America	Air - Sea
?	United Arab Emirates	EU	Sea - Air
		Southeast Europe [*transit point*]	Sea - Air
		Africa (Angola, Côte d'Ivoire, Senegal, Gabon, Ghana, Guinea, Djibouti, Libya, Morocco)	?
		Middle East (Saudi Arabia, Jordan, Yemen, Kuwait [*transit point*])	?
China	Kuwait	EU	?
Thailand		East Africa	?
United Arab Emirates			
Turkey	Albania	EU	Road
China			
Hong Kong (China) [*transit point*]			
United Arab Emirates [*transit point*]			
?	Ukraine	Northeast Europe (Russia, Lithuania, Estonia, and Germany)	Road

Notes: The position of Panama, Belarus and Saudi Arabia in the global trade of counterfeit perfumery and cosmetics is undetermined. Panama exports counterfeit perfumery and cosmetics to the US and other South American economies (e.g. Venezuela). Belarus exports counterfeit perfumery and cosmetics to Latvia and Lithuania. In both cases, the indicators are not clear on whether these economies are producers or not, and no data were received from Panamanian and Belarusian customs authorities in order to identify potential provenance economies as transit points. Finally, Saudi Arabia appears to be a central transit point in the global trade of counterfeit perfumery and cosmetics, but it has not been identified once as a provenance economy in the database.

Transport modes and size of shipments

Over the period 2011-2013, the largest share of shipments of counterfeit perfumery and cosmetics was by mail, accounting for 51% of the total number of global customs seizures of infringing perfumes and cosmetic preparations (Figure 2.11). However, the shares of shipments by road (28%), sea (15%) and air (6%) were also significant.

Looking at the details, one can see that postal parcels were mostly used by counterfeiters located in producing economies – China, Malaysia, Thailand, India, Singapore and Turkey – and those located in Hong Kong (China) to reach Europe, the US, Canada, Australia, New Zealand and Japan (Tables 2.11 and 2.12).

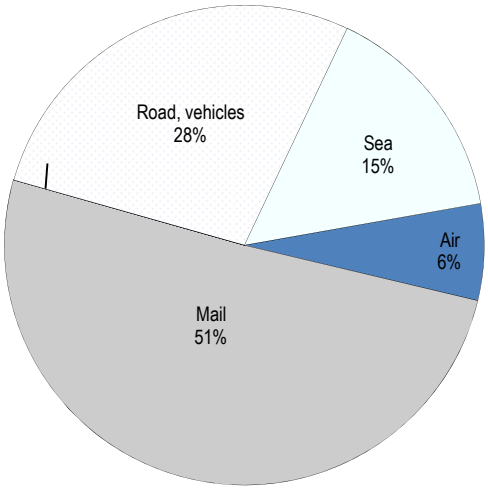
Counterfeit perfumes and cosmetic preparations exported from the Far East Asian economies to Middle East and African economies were carried mostly by sea or air.

Those same transport modes were used for goods transiting from Middle East economies to Africa.

Finally, counterfeit perfumery and cosmetics exported from Turkey to the EU, or those transiting by economies from the Southeast Europe, were transported by road.

Figure 2.11. Conveyance methods for counterfeit perfumery and cosmetics, 2011-2013

As a percentage of total seizures.

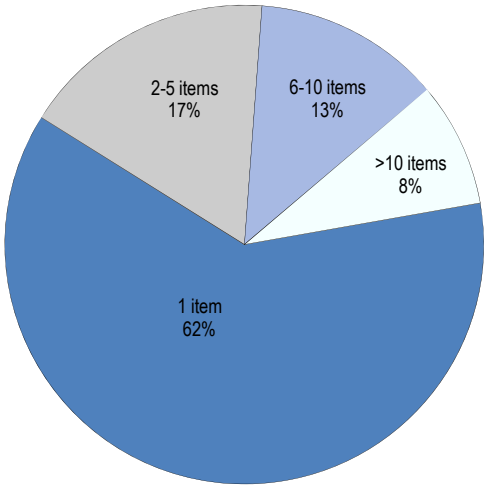


Statlink: http://dx.doi.org/10.1787/888933529407

The dominance of postal parcels in the global trade of counterfeit perfumes and cosmetic preparations implies that the average size of shipments tends to be very small. As reported in Figure 2.12, 62% of total shipments of counterfeit perfumery and cosmetics between 2011 and 2013 contained only one item, and 17% contained two and five articles.

Figure 2.12. Size of shipments of counterfeit perfumes and cosmetics, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529426

Trade routes for fake leather articles and handbags

Summary

China is the main producer of counterfeit leather articles and handbags. Fakes are exported across the globe either directly, or using several large trade hubs, such as Hong Kong (China) and Macau (China) and Kuwait. Other regional producers of counterfeit leather articles and handbags include Cambodia, the Philippines, Thailand, Indonesia and Malaysia. They export fakes directly to the EU and the US. Finally, Turkey and Tunisia are also indicated as important producers that particularly target the EU.

Postal parcels were the main conveyance method for fake leather goods used by counterfeiters in producing economies and transit points to ship goods to the US and the EU. Air and sea transport were used for sending counterfeit leather articles and handbags from producing economies to transit points.

Overview of IP intensity and counterfeiting

The leather articles and handbag industry refers to the HS 42 product category. This category notably includes articles of apparel and clothing accessories made of leather or of composition leather; but also trunks; suits, cameras, jewellery, cutlery cases; travel, tool and similar bags wholly or mainly covered by leather, composition leather, plastic sheeting, or textile materials.

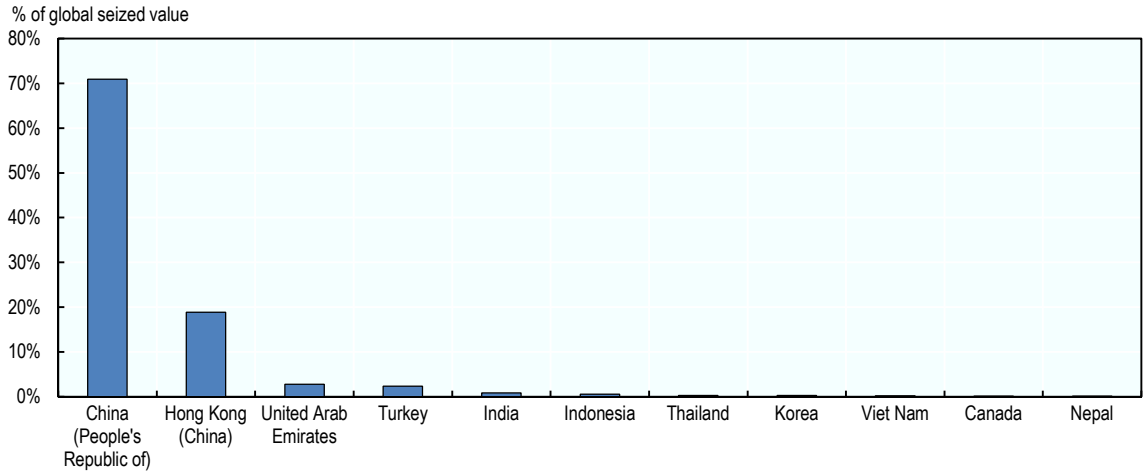
In 2013, the global trade value of leather articles and handbags was USD 74.1billion, around 0.5% of total world trade in that year. In addition, the industry is relatively IP intense. According to the data provided by WIPO (WIPO, 2017), the number of trademark applications for the leather articles and handbag industry was 87 004 in 2013,[9] around 2.2% of all trademark applications registered that year. This put this industry in the top 30% of intensity in trademarks among 45 industries registered in the Nice product classification.

The high trademark-intensity of the leather articles and bag industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit articles of leather and handbags was up to USD 8.6 billion (EUR 6.2 billion) in 2013. This represents more than 11.5% of the total trade in leather articles and handbags, and makes the industry the most affected by global counterfeiting and piracy in terms of trade percentage.

Provenance and destination economies

According to the OECD-EUIPO database on global customs seizures, China was by far the main provenance economy of IP-infringing articles of leather and handbags between 2011 and 2013, being the origin of 71% of the total seized value of this product type (Figure 2.13). It was followed by Hong Kong (China) (19%), the United Arab Emirates (3%) and Turkey (2%).

Figure 2.13. Top provenance economies for counterfeit leather articles and handbags, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529445

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for the leather articles and handbag industry compare the customs seizures intensities of infringing products with licit trade intensities for each provenance economy. These confirm that China is the most likely economy to export counterfeit leather products and bags (Table 2.13). It is followed by large Asian trade hubs (Hong Kong (China), Macau (China) and Singapore); a group of Far East Asian economies (Philippines, Thailand, Cambodia); some Middle East economies, such as United Arab Emirates and Kuwait; Turkey and Albania; and a group of North African economies (Egypt, Morocco, Tunisia).

Table 2.13. Relative likelihood of an economy to be a source of fake leather articles and handbags

GTRIC-e for leather articles and handbags; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Macau (China)	0.701
Albania	0.695
Hong Kong (China)	0.687
Turkey	0.580
United Arab Emirates	0.433
Egypt	0.420
Singapore	0.400
Philippines	0.384
Tunisia	0.383
Thailand	0.361
Morocco	0.357

Table 2.13. Relative likelihood of an economy to be a source of fake leather articles and handbags *(continued)*

Kuwait	0.346
Cambodia	0.335

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Interestingly, the list of top provenance economies for counterfeit leather products and bags imported into the EU is almost exactly the same as the list for world imports (Table 2.14). The key role played by Turkey for the EU, and the inclusion of Iran in the list of top provenance economies, need however to be noticed.

Table 2.14. Relative likelihood of an economy to be a source of fake leather articles and handbags imported into the EU

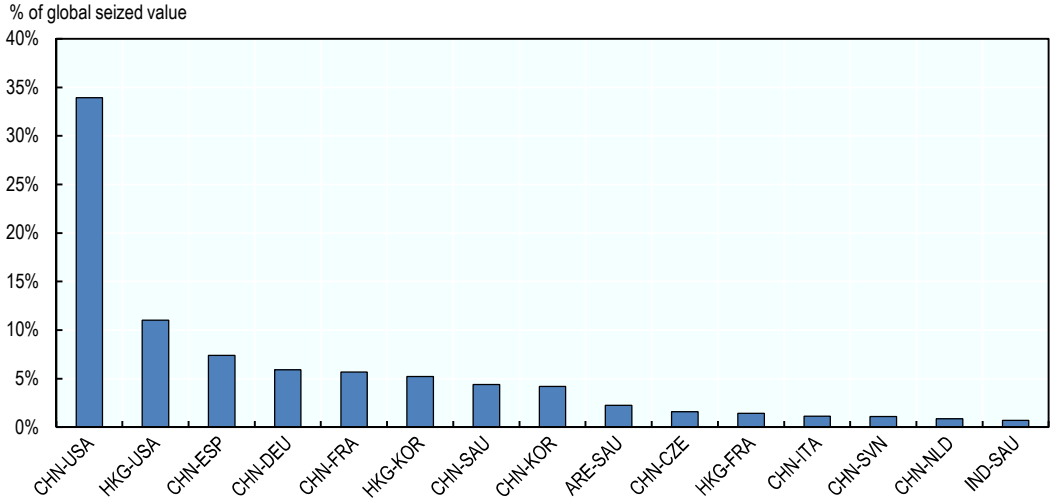
GTRIC-e for leather articles and handbags to the EU; average 2011-2013

Economy	GTRIC UE
China (People's Republic of)	1.000
Hong Kong (China)	0.710
Turkey	0.589
United Arab Emirates	0.579
Philippines	0.507
Singapore	0.507
Macau (China)	0.464
Egypt	0.462
Albania	0.426
Thailand	0.423
Morocco	0.371
Iran	0.362
Tunisia	0.315
Malaysia	0.311

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Descriptive statistics on the most intensive trade routes presented in Figure 2.14 indicate that the largest share of counterfeit leather articles and bags are exported from China and Hong Kong (China) to the US and the EU. There are also important trade flows from those provenance economies and India to the Middle East, including Saudi Arabia and the United Arab Emirates.

Figure 2.14. Top provenance-destination economies for counterfeit leather articles and handbags, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529464

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates that China is the main producer of counterfeit leather articles and handbags (Table 2.15. See Annex C for complete lists of RCAT-e and RCAP-e indices). It exports the fakes across the globe directly, but also uses the large Asian trade hubs of Hong Kong (China) and Macau (China) and some Middle East economies (e.g. Kuwait) as transit points.

A group of Far East Asian economies also appear to be important producers of counterfeit leather articles and handbags. These include Cambodia, the Philippines, Thailand, Indonesia and Malaysia. They mainly export the fakes directly to the EU and the US, but also use the large Asian trade hubs as transit points.

Finally, Turkey and Tunisia are also indicated as important producers. Compared to the other producing economies, they appear to particularly target the EU. Note also that Turkey uses some Southeast European economies, such as Albania, to reach the EU.

Table 2.15. Producers of counterfeit leather articles and bags, 2011-2013

Producing economy	Destinations	Transport mode
China	EU	Mail
	Southeast Europe (incl. Bosnia and Herzegovina [*transit point*] and Albania [transit point])	Sea - Mail
	US	Mail - Sea
	Canada	Mail
	Australia	Sea - Air
	New Zealand	Sea
	Japan	Sea - Air - Mail
	Korea	Sea
	North, West and Central Africa (incl. Morocco[*transit point*] and Egypt [*transit point*])	Sea - Air
	Israel	Sea - Air
	Jordan	Sea - Road
	Kuwait[*transit point*]	Sea
	Saudi Arabia	Sea - Air
	Qatar	Sea - Air
	Hong Kong (China) [*transit point*]	Road
	Macau (China) [*transit point*]	Road
Cambodia, Philippines, Thailand, Indonesia, Malaysia	EU	Mail - Air - Sea
	US	Mail - Air
	Australia	Air - Sea
	Hong Kong (China) [*transit point*]	Road
	Macau (China) [*transit point*]	Road
	Singapore[*transit point*]	Road
	Saudi Arabia	Sea - Air
Turkey	EU	Mail - Road - Air
	Albania[*transit point*]	Road
	US	Mail - Air
	Morocco[*transit point*]	Air
	Saudi Arabia	Air - Sea
Tunisia	EU	Mail
	US	Mail

The identified transit points are listed in Table 2.16. It is noticeable that the large Asian trade hubs, i.e. Hong Kong (China), Macau (China) and Singapore, appear to be the main transit points in the global trade of leather articles and handbags. They receive these counterfeit products from China and the other Far East Asian producers previously identified, and re-export them across the globe.

Some Middle Eastern economies, such as Kuwait, and some North African economies, such as Egypt and Morocco, also appear to be important transit points for the

fake leather articles and bags exported from Far East Asia. Finally, some economies in Southeast Europe, such as Albania and Bosnia and Herzegovina, appear to be EU gateways for fakes received notably from Turkey by road.

Table 2.16. Key transit points for counterfeit leather articles and handbags, 2011-2013

Provenance economy	Transit points	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	EU	Mail - Air - Sea
Cambodia		US	Mail - Air - Sea
Philippines		Canada	Mail - Air
Indonesia		Australia	Mail - Air - Sea
Malaysia		Japan	Air - Mail - Sea
Thailand		Korea	Mail - Sea
		Central and South America	Mail - Air
		Kuwait	Air - Sea
		Saudi Arabia	Air - Sea
		Qatar	Air - Sea
China	Macau (China)	US	Mail
Cambodia			
Philippines			
Malaysia			
Thailand			
China	Singapore	EU	Mail
Cambodia		US	Mail
Malaysia		Japan	Mail - Sea
Philippines		Korea	Mail - Sea
Thailand			
Indonesia			
China	Kuwait	EU	Mail
Hong Kong (China)			
Thailand			
United Arab Emirates			
?	Egypt	EU	Mail - Air
		Yemen	Road - Air
China	Morocco	EU	Mail - Air
Turkey			
Turkey	Bosnia and Herzegovina, and Albania	EU	Road
United Arab Emirates			
China			

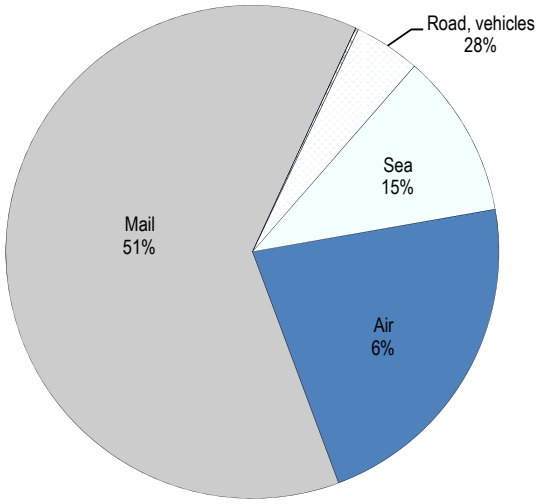
Transport modes and size of shipments

Over the period 2011-2013, the largest share of shipments of counterfeit articles of leather and handbags was sent by mail, at 63% of the total number of global customs seizures (Figure 2.15). However, the share of shipments by air (22%), sea (11%) and road (4%) was also significant.

By looking at the details, one can see that postal parcels were mostly used by counterfeiters located in producing economies and those located in transit points to reach developed economies, notably the US and those located in the EU (see Tables 15 and 16). Air and sea transports were used for trade flows of counterfeit leather articles of handbags that went from producing economies to transit points.

Figure 2.15. Conveyance methods for counterfeit leather articles and handbags, 2011-2013

As a percentage of total seizures.

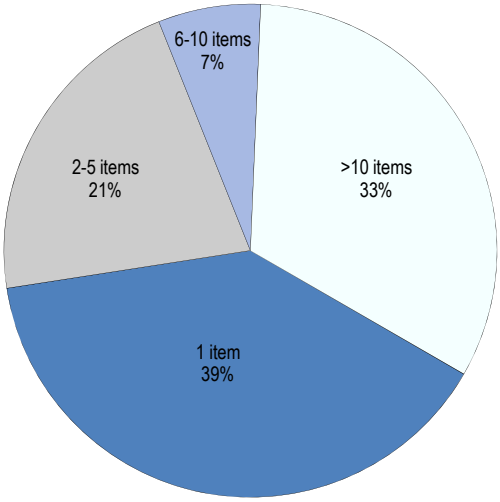


Statlink: http://dx.doi.org/10.1787/888933529483

The size of shipments of counterfeit articles of leather and handbags ranged between one and more than ten items (Figure 2.16). The small shipments were mainly parcels mailed directly from producers to the final destination economies, while counterfeit articles of leather and bags were mainly sent in large shipments from the producing economies to their transit points.

Figure 2.16. Size of shipments of counterfeit leather articles and handbags, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529502

Trade routes for fake clothing and fabrics

Summary

China is the main producer of counterfeit clothes and textile fabrics. In addition, Viet Nam, Thailand, Cambodia and Malaysia also appear as important producers, exporting them across the globe, either directly, or via Hong Kong (China) and Singapore. India, Pakistan and Bangladesh are also important producers of counterfeit textile articles, which they ship to the EU, the US, Kuwait and Saudi Arabia. Finally, Turkey, Tunisia and Morocco are also indicated as important producing economies, mostly destined for the EU.

The main transit hubs for the trade in fake clothes and fabrics include Hong Kong (China), Singapore and the United Arab Emirates.

Fake clothes and fabrics enter the EU and the US from producing economies and transit hubs mostly in the post. Air and sea transport are used for exporting fake clothes and fabrics from producing economies to transit points. Finally, road transport is used for trafficking fake clothes and fabrics from Middle Eastern transit economies to the EU.

Overview of IP intensity and counterfeiting

The clothing and fabrics (knitted or crocheted) industry refers to the HS 60 and HS 61 product categories, and mainly includes shirts, blouses, coats and suits. In 2013, the global trade value of the industry was USD 252 billion, around 1.2% of total world trade in that year.

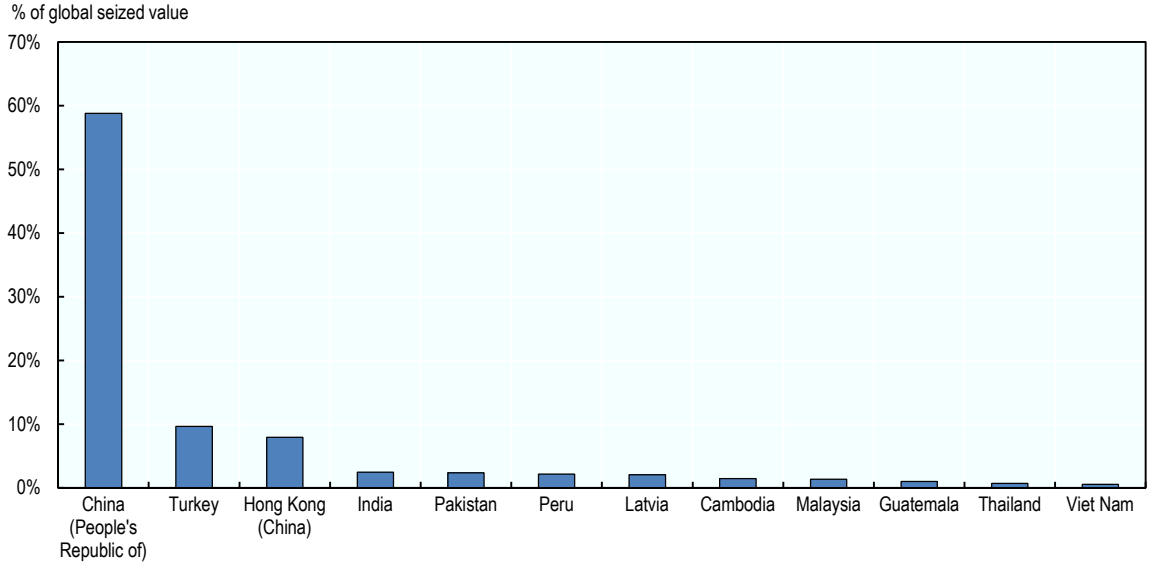
According to the data provided by WIPO (WIPO, 2017), the number of trademark applications for the clothing and footwear industries combined was 254 167 in 2013,[10] around 5.5% of all world trademark applications registered that year. This made these industries the fourth most intense in terms of trademarks out of 45 industries registered in the Nice product classification.

The high IP-intensity of the clothing industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit clothing and fabrics was up to USD 27.7 billion (EUR 20.3 billion) in 2013. This represents more than 11% of global trade in clothing and textile fabrics, and ranks the industry as third-most affected by global counterfeiting and piracy in relative terms (i.e. as a percentage of world imports within the product category) and fifth in terms of value.

Provenance and destination economies

According to the OECD-EUIPO database on global customs seizures, China was by far the main provenance economy for counterfeit clothing and textile fabrics between 2011 and 2013, being the origin of 59% of the total seized value of this product type (Figure 2.17). It was followed by Turkey (10%) and Hong Kong (China) (8%).

Figure 2.17. Top provenance economies for counterfeit clothing and textile fabrics, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529521

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for counterfeit textiles, which compare these customs seizures intensities of infringing products with licit trade intensities for each provenance economy, confirm that China, Turkey and Hong Kong (China) are the most likely to export counterfeit clothing and textile fabrics (Table 2.17). Other implicated economies include Singapore, a group of developing Far East Asian economies (e.g. Thailand and Viet Nam), the United Arab Emirates, a group of countries located in the frontier of Europe (e.g. Ukraine, Azerbaijan), a group of Latin American economies (e.g. Panama, Honduras and Peru), India and Morocco.

Table 2.17. Relative likelihood of an economy to be a source of fake clothing and textile fabrics, 2011-2013

GTRIC-e for clothing and textile fabrics; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Turkey	0.698
Hong Kong (China)	0.626
Singapore	0.456
Thailand	0.393
Ukraine	0.352
United Arab Emirates	0.341
Azerbaijan	0.329
Panama	0.328

Table 2.17 Relative likelihood of an economy to be a source of fake clothing and textile fabrics, 2011-2013 *(continued)*

Honduras	0.280
Viet Nam	0.256
India	0.247
Peru	0.243
Morocco	0.232

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

As for most other product categories, the top provenance economies for counterfeit clothing and textile fabrics imported to the EU are very similar to those for world imports (Table 2.18). The only differences are the inclusion of Senegal, and the exclusion of Latin America.

Table 2.18. Relative likelihood of an economy to be a source of fake clothing and textile fabrics imported into the EU, 2011-2013

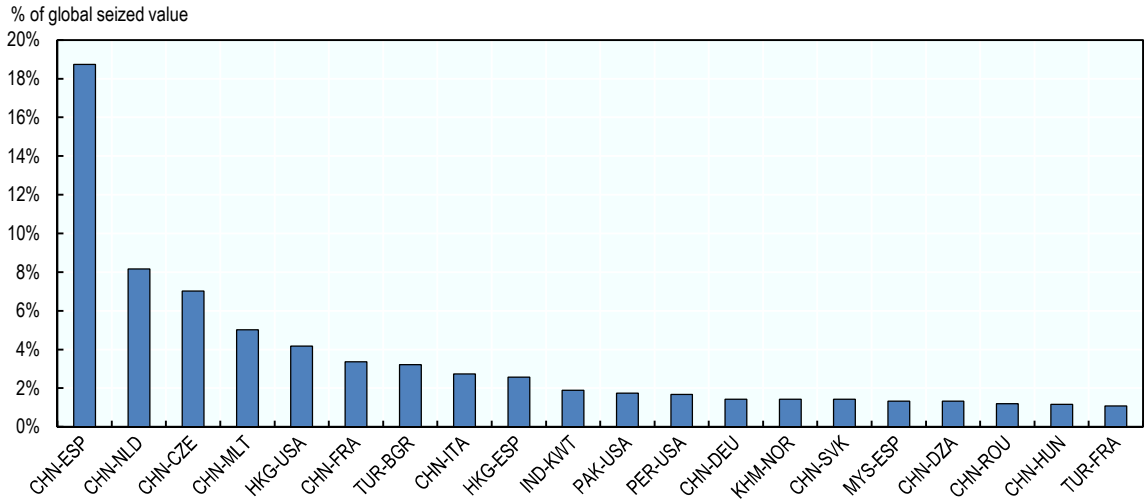
GTRIC-e for clothing and textile fabrics to the EU; average 2011-2013

Economy	GTRIC EU
China (People's Republic of)	1.000
Turkey	0.869
Singapore	0.828
Hong Kong (China)	0.787
Thailand	0.623
Senegal	0.535
United Arab Emirates	0.526
Morocco	0.387
India	0.339
Viet Nam	0.311

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

Descriptive statistics on the most intensive trade routes in Figure 2.18 indicate that the largest share of counterfeit clothing and textile fabrics are exported from China and Hong Kong (China) to the US and the EU. Important trade flows are also noticeable from Turkey to Europe, and from Pakistan and Peru to the US.

Figure 2.18. Top provenance-destination economies for counterfeit clothing and textiles, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529540

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates that China is the main producer of counterfeit clothing and textiles fabrics (Table 2.19. See Annex C for complete lists of RCAT-e and RCAP-e indices). Viet Nam and Thailand also appear to be important producers. It is interesting to note that these economies export the counterfeit textile articles directly worldwide, as well as using the large Asian trade hubs of Hong Kong (China) and Singapore as transit points.

India also appears to be an important producer of counterfeit textile articles. Counterfeiters located in India tend to export directly to Europe, the US and some southeast European economies. Finally, Turkey is also indicated as an important producing economy, targeting the EU in particular.

Table 2.19. Producers of counterfeit clothing and textile fabrics, 2011-2013

Producing economy	Destinations	Transport mode
China	EU	Mail
	Southeast Europe [*transit point*]	Mail - Air - Sea - Road
	US	Mail - Sea
	Australia	Mail - Sea
	New Zealand	Mail - Sea
	Japan	Mail - Sea
	Korea	Mail - Sea
	South America (Chile, Brazil, Colombia, Venezuela, Mexico, Belize)	Mail - Sea
	North Africa (Algeria, Morocco, Libya)	Air - Sea
	Western Africa (Guinea, Nigeria, Congo)	Sea
	Israel	Sea
	Jordan	Sea - Road
	Kuwait	Sea - Air
	Saudi Arabia	Sea - Air
	Yemen	Sea
	Hong Kong (China) [*transit point*]	Road
	Singapore[*transit point*]	Road
Viet Nam and Thailand	EU	Air - Mail
	US	Air - Mail
	Hong Kong (China) [*transit point*]	Road
	Singapore [*transit point*]	Road
	Saudi Arabia	Sea
India	EU	Air - Mail
	Southeast Europe [*transit point*]	Air - Sea
	US	Air - Mail - Sea
Turkey	EU	Mail - Air - Road
	Southeast Europe [*transit point*]	Road
	US	Air
	Kuwait	Air

Hong Kong (China) and Singapore appear to be central transit points for the global trade in counterfeit clothing and textile fabrics (Table 2.20). These large Asian trade hubs receive indeed counterfeit clothing and textiles from China and the smaller Far East Asian producing economies (Thailand, Viet Nam), and re-export them mostly to the US and Europe. Note that, compared to Singapore, the scope of destination economies for fakes re-exported from Hong Kong (China) is larger, extending to Oceania, Latin American, African and the Middle East.

The United Arab Emirates also appears to be important transit point in the global trade of counterfeit textile articles. While it is not possible to identify where these fakes originate, they appear to be being re-exported to Europe, the US, other economies in the Middle East (e.g. Kuwait and Qatar) and northeast Africa.

Table 2.20. Key transit points for counterfeit clothing and textile fabrics, 2011-2013

Provenance economy	Transit point	Destinations	Transport mode from transit to destination
China		EU	Mail - Air
Thailand		Southeast Europe [*transit point*]	Air - Mail
Viet Nam		US	Mail - Air
	Hong Kong (China)	Australia	Mail
		Japan	Air - Sea
		West, North and South Africa	Air
		Latin America	Air - Mail - Sea
		Kuwait	Air
China		EU	Mail
Thailand		Southeast Europe [*transit point*]	Mail - Air
Viet Nam	Singapore	US	?
Cambodia			
Malaysia			
		EU	Mail - Air - Sea
		Southeast Europe [*transit point*]	Air - Road
?	United Arab Emirates	US	?
		Kuwait	Sea - Road
		Qatar	Sea - Road
		Northeast Africa	Sea
?	Ukraine and Azerbaijan	Russia, Lithuania, Germany	Road

Notes: The situation of Honduras, Panama and Guatemala, which (re)export counterfeit clothing and textile fabrics to the US, is undetermined. The indicators do not confirm if they are producers or not, and no data were received from their respective customs authorities to identify potential source countries for these fake goods in the case that they are transit points.

Transport modes and size of shipments

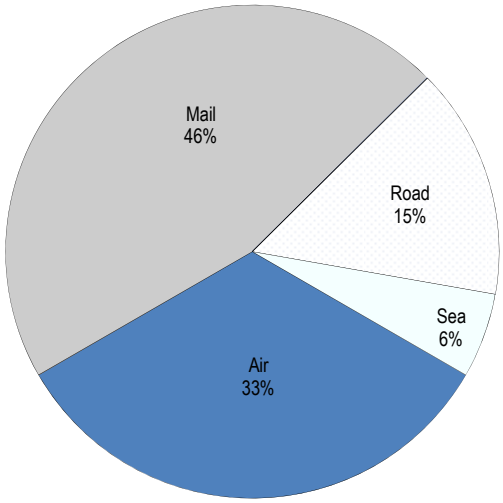
Over the period 2011-2013, most counterfeit clothing and textile fabrics were sent either by mail or air, at 46% and 33% of the total number of global customs seizures reported in the database, respectively (Figure 2.19). A smaller share went by road (15%), and sea (6%).

Looking at the details, one can see that postal parcels were mostly used by counterfeiters in both producing economies and transit points to reach developed economies, notably the US and within the EU (Tables 2.19 and 2.20). Air and sea transport were mainly used for sending counterfeit clothing and textile fabrics from

producing economies to transit points. Finally, road transport was used mainly for traffic between Middle East economies, and from Southeast Europe to the EU.

Figure 2.19. Conveyance methods for counterfeit clothing and textile fabrics, 2011-2013

As a percentage of total seizures.

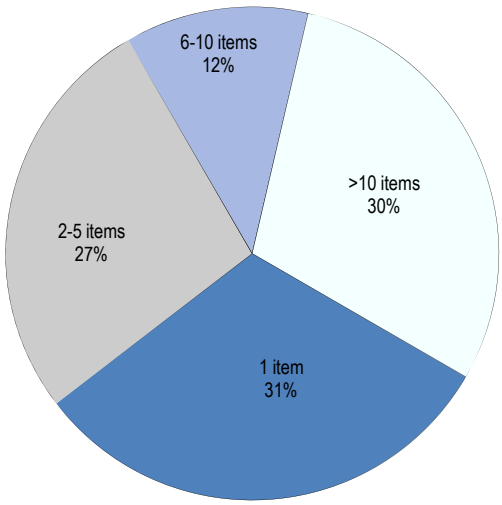


Statlink: http://dx.doi.org/10.1787/888933529559

The size of shipments of counterfeit clothing and textile fabrics reflects these different trade patterns, being either very small (i.e. between one and five items) or very large (i.e more than 10 items). Small shipments correspond notably to postal parcels shipped from both producing economies and transit points to the final destination (e.g. the EU or US), while large shipments correspond to the trade flows of counterfeit textile articles from producing economies to their transit points.

Figure 2.20. Size of shipments of counterfeit clothing and textile fabrics, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529578

Trade routes for fake footwear

Summary

China is the main producer of counterfeit footwear, followed by the Philippines, Thailand, Viet Nam and Malaysia. Fake footwear is shipped from these economies directly to the EU, the US, Kuwait, Saudi Arabia, Qatar, Australia, Japan, Korea and numerous economies located throughout the African and the South American continents. They are also shipped to some trade hubs, such as Hong Kong (China) and Singapore. In addition India and Pakistan also appear to be important producers of counterfeit footwear, which is shipped directly to the EU, the US, Kuwait and Saudi Arabia. Finally, Turkey and Morocco are also indicated as important producers of fake footwear, targeting the EU.

Hong Kong (China), Singapore and the United Arab Emirates are the main global transit points. Regionally, Albania, Bosnia and Herzegovina, and Morocco are important transit points for counterfeit footwear shipped to the EU, while Panama is an important transit point for fake footwear en route to the US.

Most counterfeit footwear is shipped by mail in small consignments of up to five items.

Overview of IP intensity and counterfeiting

The footwear industry refers to the HS 64 product category. In 2013, the global trade value of the industry was USD 123 billion, around 0.6% of total world trade in that year.

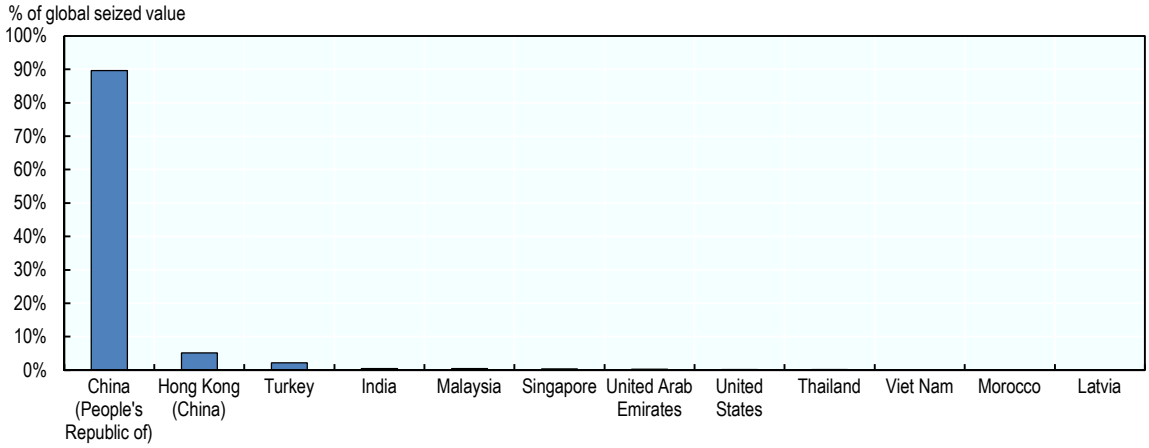
According to the data provided by WIPO (WIPO, 2017), the number of trademark applications for the footwear and clothing industries combined was 254 167 in 2013,[11] around 5.5% of all world trademark applications registered that year. This made those industries the fourth-most intense in terms of trademarks out of 45 industries registered in the Nice product classification.

The high IP-intensity of the footwear industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit footwear, was up to USD 13.3 billion (EUR 9.7 billion) in 2013. This represents 10.5% of global trade in footwear, and makes the industry the fifth-most affected by global counterfeiting and piracy in relative terms (i.e. as a percentage of world imports within the product category) and tenth in terms of value.

Provenance and destination economies

According to the OECD-EUIPO database on global customs seizures, China was by far the main provenance economy for counterfeit footwear between 2011 and 2013, being the origin of almost 90% of the total seized value of IP-infringing footwear (Figure 2.21). Hong Kong (China) (5%) and Turkey (2%) came a very distant second and third.

Figure 2.21. Top provenance economies for counterfeit footwear, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529597

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for counterfeit footwear, which compare these customs seizures intensities of infringing products with legitimate trade intensities for each provenance economy, confirm that China, Hong Kong (China) and Turkey are the most likely to export counterfeit footwear (Table 2.21). Other implicated economies include Singapore; a group of developing Far East Asian economies (e.g. the Philippines, Thailand and Malaysia); Azerbaijan and Armenia; the United Arab Emirates and Iran; Panama; Senegal; and Morocco.

Table 2.21. Relative likelihood of an economy to be a source of fake footwear, 2011-2013

GTRIC-e for footwear; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.679
Turkey	0.679
Azerbaijan	0.547
Singapore	0.496
Philippines	0.496
Armenia	0.442
United Arab Emirates	0.260
Senegal	0.216
Iran	0.212
Panama	0.209
Morocco	0.202
Thailand	0.193
Malaysia	0.189

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

The list of top provenance economies for counterfeit footwear imported to the EU is almost exactly the same as the list for world imports (Table 2.22). Note however that the roles of Turkey, Iran and Senegal as provenance economies are considerably larger in EU imports.

Table 2.22. Relative likelihood of an economy to be a source of fake footwear imported into the EU, 2011-2013

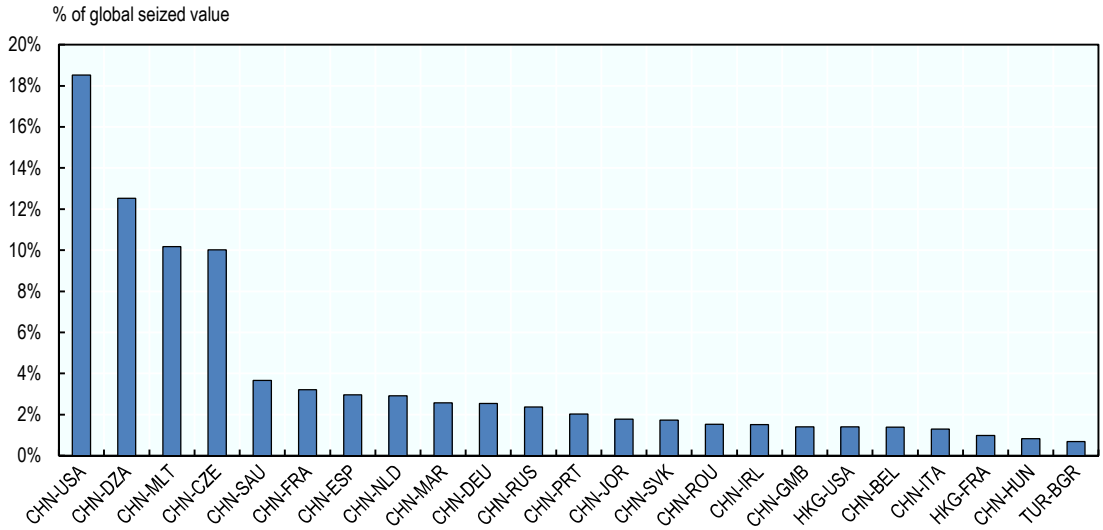
GTRIC-e for footwear to the EU; average 2011-2013

Economy	GTRIC EU
China (People's Republic of)	0.995
Turkey	0.857
Hong Kong (China)	0.839
Philippines	0.790
Singapore	0.761
Iran	0.748
Senegal	0.589
Malaysia	0.427
Morocco	0.349
United Arab Emirates	0.344
Armenia	0.280
Thailand	0.242
Viet Nam	0.160

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Descriptive statistics on the most intensive trade routes presented in Figure 2.22 indicate that the largest share of counterfeit footwear is indeed exported from China to the US and the EU, as well as to Saudi Arabia, Jordan and Africa (e.g. Algeria or Gambia). Important trade flows are also noticeable from Hong Kong (China) to the US and the EU, and from Turkey to Southeast Europe (e.g. Bulgaria).

Figure 2.22. Top provenance-destination economies for counterfeit footwear, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529616

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates that China is the main producer of counterfeit footwear (Table 2.23. See Annex C for complete lists of RCAT-e and RCAP-e indices). The Philippines, Thailand, Viet Nam and Malaysia also appear as important producers of counterfeit footwear. Counterfeiters located in these five economies export directly to Europe and the US, as well as via large Asian trade hubs (e.g. Hong Kong (China) and Singapore) and Middle East economies (e.g. Kuwait, Saudi Arabia, Qatar). Compared to the other Asian economies, the scope of destination economies for the fake footwear exported from China is larger, and also includes Australia, Japan, Korea and numerous economies located throughout the African and the South American continents.

India also appears as an important producer of counterfeit footwear. Counterfeiters located in India tend to export directly to the EU; the US; some Middle Eastern economies, such as Kuwait and Saudi Arabia; and Northeast Africa (e.g. Somalia).

Finally, Turkey and Morocco are also indicated as important producers, targeting the EU and Southeast Europe in particular.

Table 2.23. Producers of counterfeit footwear, 2011-2013

Producing economy	Destinations	Transport mode
China	EU	Mail - Sea
	Southeast Europe (incl. Albania[transit point] and Bosnia and Herzegovina[transit point])	Sea
	US	Mail - Sea
	Australia	Mail - Sea
	Japan	Mail - Sea - Air
	Korea	Mail - Sea - Air
	Africa (incl. Morocco [transit point] and Senegal[transit point])	Air - Sea
	South and Central America (incl. Panama[transit point])	Sea - Air
	Kuwait	Sea
	Hong Kong (China) [transit point]	Road
	Singapore [transit point]	Road
Philippines, Thailand, Malaysia, Viet Nam	EU	Mail - Air
	US	Mail - Air
	Kuwait	Sea
	Saudi Arabia	Sea
	Qatar	Sea
	Hong Kong (China) [transit point]	Road
	Singapore [transit point]	Road
India	EU	Mail - Air
	US	?
	Kuwait	Sea
	Saudi Arabia	Sea - Air
	Somalia	Sea
Turkey	EU	Mail - Road - Air - Sea
	Southeast of Europe (incl. Albania [transit point] and Bosnia and Herzegovina [transit point])	Road
	North Africa (Morocco, Algeria)	Sea
	Saudi Arabia	Road - Air
Morocco	EU	Sea - Air - Mail

The list of key transit points for counterfeit footwear identified using the methodology developed in this study indicates that the trade routes for fake footwear are very complex and diverse (Table 2.24).

Hong Kong (China) and Singapore appear to be central transit points for the global trade in counterfeit footwear (Table 2.24). These large Asian trade hubs receive fakes from China, as well as from the smaller Far East Asian producing economies (the Philippines, Thailand, Viet Nam and Malaysia), and re-export them mostly to the US and Europe. Note that, compared to Singapore, the scope of destination economies for the IP-

infringing footwear re-exported from Hong Kong (China) is larger, and also includes notably Australia, Japan, Korea, South American economies, and Kuwait.

The United Arab Emirates also appears to be an important transit point in the global trade of counterfeit footwear. While it is not possible to identify where the fakes originate, it appears that they are re-exported to the EU, Northeast Africa (e.g. Libya, and Somalia) and other Middle Eastern economies, such as Kuwait. Located in the same geographical area, Iran is also identified as a key transit point for counterfeit footwear, notably for those en route to the EU.

Morocco appears to be an important transit point for footwear exported to the EU. These originate mainly in Turkey, but also from China and Hong Kong (China).

Azerbaijan and Armenia are also identified as transit points for counterfeit footwear destined for Russia and Northeast Europe. It is however impossible to determine where these fakes originate.

Finally, Panama appears to be an important transit point for fake footwear exported to the US, as well as for those shipped to the Caribbean and South America. Once again the origin economies cannot be identified.

Table 2.24. Key transit points for counterfeit footwear, 2011-2013

Provenance economy	Transit point	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	EU	Mail - Air
Philippines		Southeast Europe (incl. Albania [*transit point*] and Bosnia and Herzegovina[*transit point*])	Mail - Air
Thailand		US	Mail - Air
Malaysia		Australia	Mail - Sea
Viet Nam		Japan	Sea - Air
		Korea	Sea - Air
		South America (Mexico, Venezuela, Guatemala, Honduras)	Air - Mail
		The Caribbean (Dominican Republic)	Air - Mail
		Kuwait	Air
China	Singapore	EU	Mail
Philippines		US	Mail
Thailand			
Malaysia			
Viet Nam			
?	United Arab Emirates	EU	Mail - Air
		Northeast Africa (Somalia, Libya)	Sea
		Kuwait	Sea - Road
		Qatar	Sea - Road
?	Iran	EU	Mail - Air
China	Morocco	EU	Sea - Air

Table 2.24 Key transit points for counterfeit footwear, 2011-2013 *(continued)*

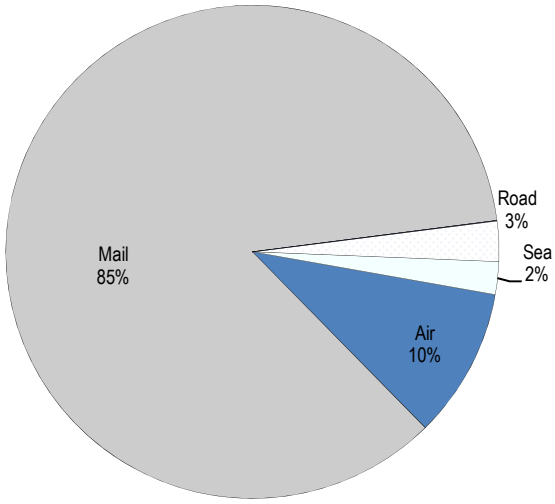
Turkey			
?	Azerbaijan	Russia	Road
?	Armenia	EU	Air - Mail
		Russia	Air
China	Senegal	EU	Air
?	Panama	US	Air - Sea
		South America and the Caribbean	Sea

Transport modes and size of shipments

Over the period 2011-2013, the largest share of counterfeit footwear was sent by mail (85%) (Figure 2.23). Air accounted for the second-largest share (10%). The dominance of mail reflects mostly the large share of counterfeit footwear exported from China and Hong Kong (China) to the EU and US in parcels (Table 2.23 and 2.24). This also implies that the size of each shipment of counterfeit footwear tends to be very small (up to five items) (Figure 2.24).

Figure 2.23. Conveyance methods for counterfeit footwear, 2011-2013

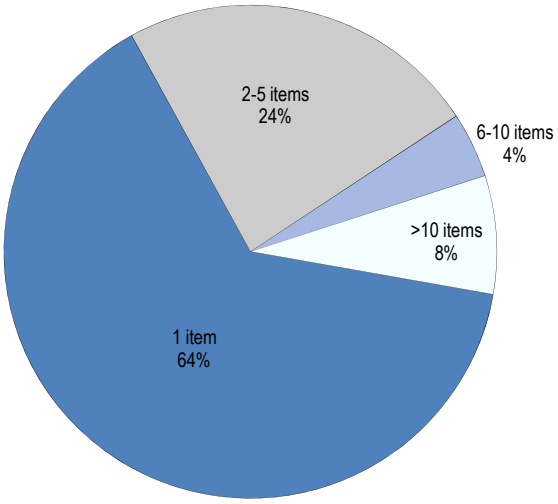
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529635

Figure 2.24. Size of shipments of counterfeit footwear, 2011-2013

As a percentage of total seizures



Statlink: http://dx.doi.org/10.1787/888933529654

Trade routes for fake jewellery

Summary

China is the main producer of fake jewellery, followed by Indonesia, Malaysia, Thailand and Viet Nam. Counterfeit jewellery is shipped from these economies directly to Europe, the US, Kuwait, Saudi Arabia, Qatar and to large trade hubs: Hong Kong (China), Macau (China) and Singapore. The destination economies for the fake jewellery exported from China include Australia, Japan, Korea and numerous economies located throughout the African and the South American continents.

The main transit points for trade in counterfeit jewellery are Hong Kong (China), Macau (China) and Singapore. Other important transit points for this type of product include Saudi Arabia and the United Arab Emirates. Lastly, Morocco is an important transit point for fake jewellery transported to the EU.

Overview of IP intensity and counterfeiting

The jewellery industry refers to the HS 71 product category. This category includes notably jewellery of precious metal, gold, silver or base metal; as well as imitation jewellery, pearls, diamonds and other precious stones.

In 2013, the global trade value of jewellery was USD 847 billion, around 4.1% of total world trade in that year.

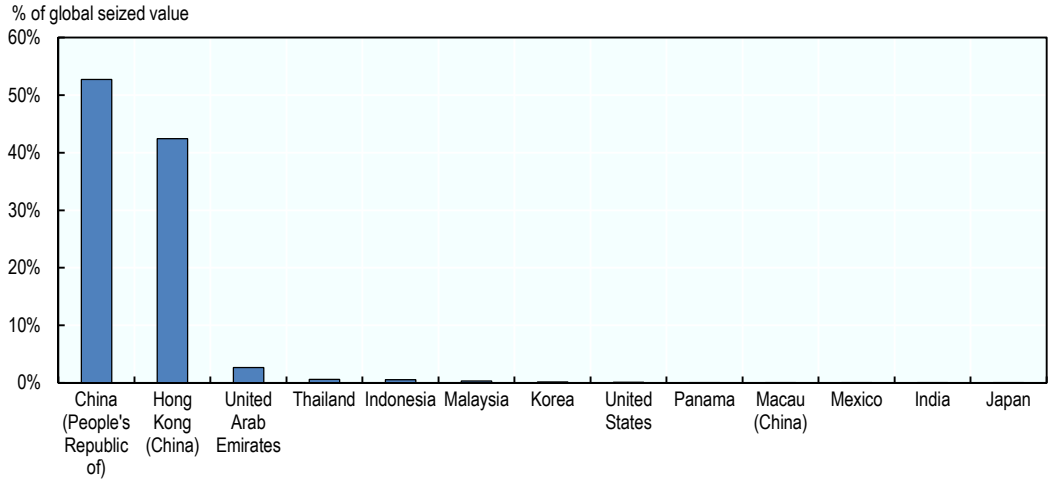
According to data provided by WIPO (WIPO, 2017), the number of trademark applications for the jewellery industry was 60 538 in 2013,[12] around 1.6% of the total number of world trademark applications registered that year. This put this industry in the top 50% of the most intense in terms of trademarks among 45 industries registered in the Nice product classification.

The high trademark-intensity of the jewellery industry and its high degree of integration in the global economy make it particularly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit jewellery articles was USD 40.9 billion (EUR 30 billion) in 2013. This represents more than 4.8% of the total trade in jewellery, and makes the industry the second-most affected by global counterfeiting and piracy in terms of value.

Provenance and destination economies

According to the data gathered in the OECD/EUIPO database on global customs seizures, China and Hong Kong (China) were the main provenance economies for counterfeit jewellery between 2011 and 2013. Altogether they were the origin of more than 90% of the total seized value of fake jewellery over that period (Figure 2.25). These two large provenance economies were followed by the United Arab Emirates and a group of Far East Asian economies, including Thailand, Indonesia and Malaysia.

Figure 2.25. Top provenance economies for fake jewellery, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529673

The GTRIC-e indices for counterfeit jewelleryalso confirm that China and Hong Kong (China) are the most likely to export fake jewellery (see Table 2.25). Other implicated economies include two other large Asian trade hubs, Macau (China) and Singapore, as well as a group of developing Far East Asian economies (Viet Nam, Thailand, Indonesia, and Malaysia), the United Arab Emirates, Morocco, Ukraine, Panama, Armenia and Turkey.

Table 2.25. Relative likelihood of an economy to be a source of counterfeit jewellery, 2011-2013

GTRIC-e for jewellery; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.575
Macau (China)	0.494
Viet Nam	0.237
Singapore	0.226
Morocco	0.150
Ukraine	0.147
United Arab Emirates	0.147
Thailand	0.125
Indonesia	0.086
Armenia	0.085
Turkey	0.084
Malaysia	0.075
Panama	0.074

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

The list of top provenance economies for counterfeit jewellery imported to the EU is similar to the list for world imports (Table 2.26). Macau (China) and Panama are however not included in EU list, as they appear to target the US more specifically (see below). On the other hand, Switzerland, Saudi Arabia and Egypt are included, while Morocco's role as a provenance economy of counterfeit jewellery increases considerably in the EU list.

Table 2.26. Relative likelihood of an economy to be a source of fake jewellery imported into the EU, 2011-2013

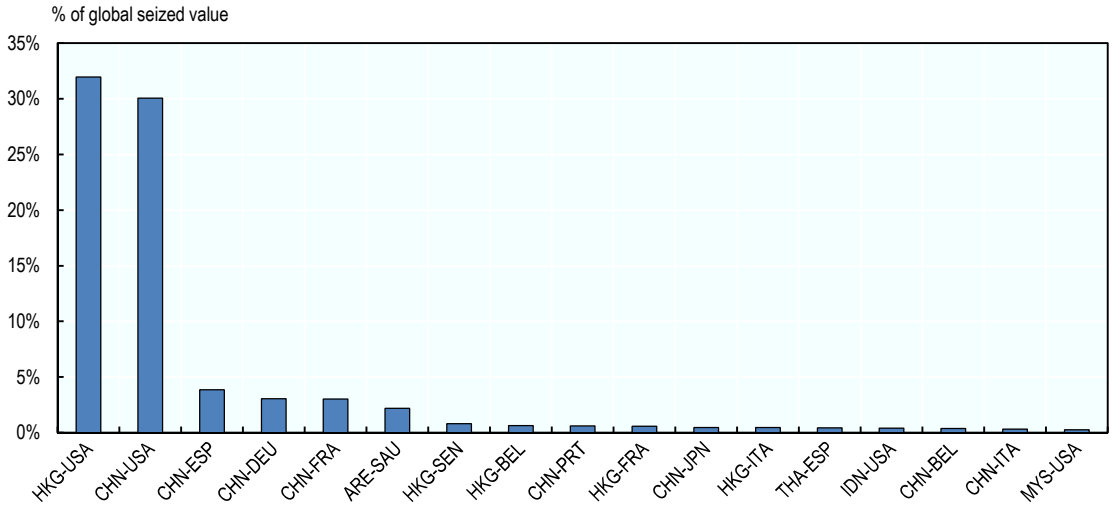
GTRIC-e for jewellery to the EU; average 2011-2013

Economy	GTRIC UE
China (People's Republic of)	1.000
Hong Kong (China)	0.473
Morocco	0.198
Singapore	0.176
Switzerland	0.169
Thailand	0.131
Viet Nam	0.122
Saudi Arabia	0.118
United Arab Emirates	0.114
Turkey	0.091
Egypt	0.078
Ukraine	0.073
Indonesia	0.054

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods

Descriptive statistics on the most intensive trade routes presented in Figure 2.26 indicate that over the period 2011-2013, the largest share of fake jewellery was exported from China and Hong Kong (China) to the US. Large trade flows of counterfeit jewellery were also noticeable from China to the EU.

Figure 2.26. Top provenance-destination economies for counterfeit jewellery, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529692

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates that China is the main producer of fake jewellery (Table 2.27. See Annex C for complete lists of RCAT-e and RCAP-e indices). Indonesia, Malaysia, Thailand and Viet Nam also appear as important producers. Counterfeiters located in these five economies export the counterfeit jewellery direct to Europe, the US, large Asian trade hubs (e.g. Hong Kong (China), Macau (China) and Singapore) and Middle East economies (e.g. Kuwait, Saudi Arabia, Qatar). Compared to the other Asian economies, however, the scope of destination economies for the fake jewellery exported from China is broader, and also includes Australia, Japan, Korea and numerous economies located throughout the African and the South American continents.

Armenia is also indicated as a producing economy of counterfeit jewellery, though counterfeiters in Armenia appear to export the fakes exclusively to the EU and Northeast Europe (e.g. Russia).

Table 2.27. Producers of counterfeit jewellery, 2011-2013

Producing economy	Destinations	Transport mode
China	Europe	Mail - Air - Sea
	US	Mail - Air - Sea
	Canada	Mail
	Australia	Mail
	Japan	Mail - Air - Sea
	South America (e.g. Colombia, Brazil, Mexico)	Mail - Air - Sea
	the Caribbean (e.g. Dominican Republic)	Sea
	Saudi Arabia [*transit point*]	Air - Sea
	Kuwait	Sea
	Hong Kong (China) [*transit point*]	Road
	Macau (China) [*transit point*]	Road
	Singapore [*transit point*]	Road
Thailand, Indonesia, Malaysia and Vietnam	EU	Mail - Air - Sea
	US	Mail - Air
	Hong Kong (China) [*transit point*]	Road - Sea
	Macau (China) [*transit point*]	Road - Sea
	Singapore [*transit point*]	Road - Sea
Armenia	EU	Mail
	Russia	Air - Road

The three large Asian trade hubs – Hong Kong (China), Macau (China) and Singapore – appear to be key transit points in the global trade of fake jewellery (Table 2.28). These receive the fakes from China, as well as from the smaller Far East Asian producing economies (Indonesia, Malaysia, Thailand and Viet Nam), and re-export them mostly to the US and to European economies. Note that Macau (China) is indicated in the database as a provenance economy only for the US. On the other hand, the scope of destination economies for the fake jewellery re-exported from Hong Kong (China) is much broader, and includes notably Canada, Australia, Japan, the South American economies, and East and West Africa.

Saudi Arabia and the United Arab Emirates are also indicated as key transit points in the global trade of fake jewellery. The former receives the fakes from China through large containers by air or sea (Table 2.28) and re-exports them by mail to Europe, by road to other Middle East economies, such as Kuwait, and to Morocco.

Morocco is also indicated as a key transit point for fake jewellery transported to the EU. Some of these fakes are notably received from Saudi Arabia. Finally, Ukraine is also indicated as a transit point for fake jewellery transiting to northeast Europe (e.g. Germany, Lithuania and Russia), but it is not possible to identify in the data the economy where these fakes originated.

Table 2.28. Key transit points for counterfeit jewellery, 2011-2013

Provenance economy	Transit points	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	Europe	Mail - Air - Sea
Indonesia		US	Mail - Air
Malaysia		Canada	Mail
Thailand		Australia	Mail - Air
Viet Nam		Japan	Air
		South America (e.g. Colombia, Brazil, Mexico)	Mail - Air
		The Caribbean (e.g. Dominican Republic)	Sea
		West and East Africa (e.g. Senegal, Nigeria, Mauritius)	Air
China	Singapore	EU	Mail
Indonesia		US	Mail
Malaysia			
Thailand			
Viet Nam			
China	Macau (China)	US	Mail
Indonesia			
Malaysia			
Thailand			
Viet Nam			
?	United Arab Emirates	Europe	Mail - Air
		Saudi Arabia [*transit point*]	Air - Sea
		Kuwait	Air - Sea
		Qatar	Air - Sea
China	Saudi Arabia	EU	Mail
		Kuwait	Road - Sea
		Morocco [*transit point*]	?
Saudi Arabia [*transit point*]	Morocco	EU	Air - Sea
?	Ukraine	Northeast Europe (e.g. Germany, Lithuania, Russia)	Mail

Notes: The status of Panama, which (re)exports counterfeit jewellery to the US; and Turkey, which (re)exports counterfeit jewellery to Europe; are not determined. The indicators do not confirm if they are producers or not, and no data were received from their respective customs authorities to identify potential source economies if they are transit points.

Transport modes and size of shipments

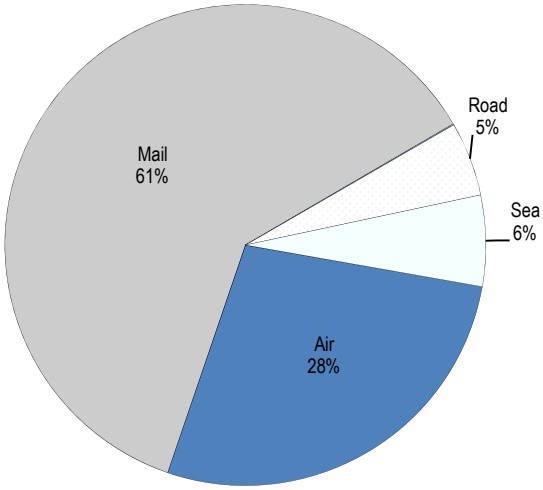
Over the period 2011-2013, the largest share of counterfeit jewellery was shipped by mail (61%), followed by air (28%) (Figure 2.27). Sea (6%) and road (5%) made up smaller shares.

Looking at the details reveals that postal parcels were used almost exclusively by counterfeiters located in producing and transit economies to reach their final destination, particularly in the EU (see Tables 2.27 and 2.28). In several cases, however, air shipments were also used.

Note finally that, unlike the other product categories, large shipments of fake jewellery including at least ten items tend to predominate in the database (Figure 2.28).

Figure 2.27. Conveyance methods for counterfeit jewellery, 2011-2013

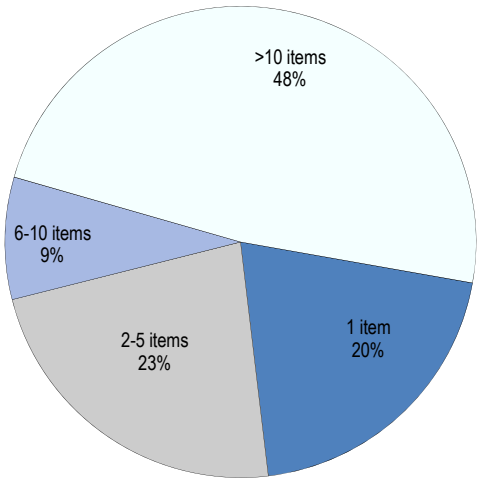
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529711

Figure 2.28. Size of shipments of counterfeit jewellery, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529730

Trade routes for fake electronics and electrical equipment

Summary

China is the main producer of counterfeit electronics and electrical equipment, which it exports throughout the globe. Other minor producers include Thailand, Korea, India and Singapore. Mexico is a regional producer of fake electronic equipment targeting the US market.

Hong Kong (China) is the largest transit point for counterfeit electronics and electrical equipment produced in China and Thailand and re-exported throughout the globe. The United Arab Emirates is also a central transit point for re-exports to Africa through large containers by sea, but also by road to other Middle East economies and by mail and air to the EU.

Regionally, Egypt and Turkey are transit points for fake electronics being shipped to the EU. Belize, Guatemala and Panama are key transit points for counterfeit electronic and electrical goods targeting the US.

Parcels were mostly used by counterfeiters located in producing economies and in Hong Kong (China) to reach OECD countries. Air and sea transport were used for trade flows of counterfeit electronics and electrical products transported from producing economies to transit points, or from some transit points to the EU.

Overview of IP intensity and counterfeiting

The electronics and electrical equipment industry refers to the HS 85 product category. This category includes notably electric motors and generators; primary and secondary batteries; electro-mechanical domestic appliances; lighting or visual signalling equipment; sound or video recording and reproducing apparatus; discs, tapes, solid-state non-volatile storage devices and smart cards; television and other transmission and reception apparatus; and electronic integrated circuits.

In 2013, the global trade value of electronics and electrical equipment was USD 2 302 billion, around 11% of total world trade in that year. This implies that electronics and electrical equipment are the most traded product category worldwide.

The industry is also strongly IP intense. According to data provided by WIPO (WIPO, 2017), the number of trademark applications for the electronics and electrical equipment industry was 274 106 in 2013,[13] around 7% of all world trademark applications registered that year. The number of patent applications for the sector was 408 098,[14] around 18% of all world patent applications. This made the industry the second-most intense in terms of trademarks among 45 industries registered in the Nice product classification, and the first in terms of patents.

The high IP-intensity of electronic products and electrical equipment and their high degree of integration in the global economy make the industry strongly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit electronic devices and electrical equipment was valued at USD 121 billion (EUR 88.6 billion) in 2013. This represents more than 5.3% of the total trade in those products, making this industry the top-most affected by global counterfeiting and piracy in terms of value.

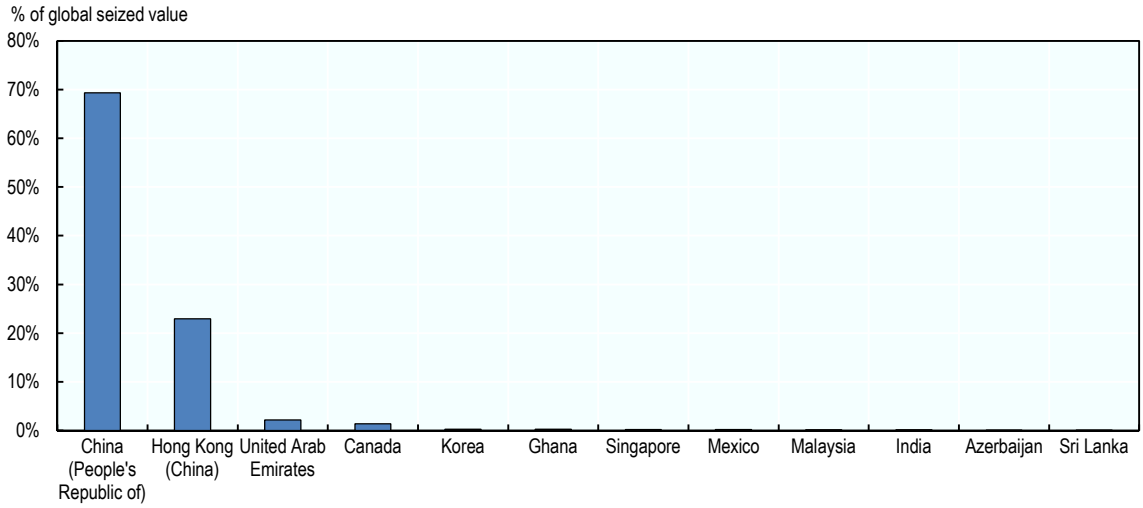
Examples of counterfeit electronic goods and electrical products recorded in the database of customs seizures are various. Over the period 2011-2013, customs authorities worldwide notably recorded seizures of counterfeit memory cards and sticks; earphones, headphones and headsets; mobile phones; batteries; chargers; microphones; speakers; and even electronic integrated circuits.

The sector of electronics and electrical equipment covers some, although not all, information and communication technology (ICT) goods. Hence findings for this sector parallel the findings of an OECD 2017 study on counterfeit trade in ICT goods (OECD, 2017). According to this study, world trade in counterfeit ICT goods accounted for as much as USD 143 billion in 2013, and 6.5% of ICT products traded worldwide were fake.

Provenance and destination economies

According to the OECD/EUIPO database on global customs seizures, China was by far the main provenance economy for counterfeit electronics and electrical equipment, being the origin of almost 70% of the global seized value of these products between 2011 and 2013 (Figure 2.29). It was followed by Hong Kong (China) (23%) and the United Arab Emirates (2%).

Figure 2.29. Top provenance economies for counterfeit electronics and electrical equipment, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529749

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices for counterfeit electronics and electronic equipment, which compare these customs seizures intensities with legitimate trade intensities for each provenance economy, confirm that China, Hong Kong (China) and the United Arab Emirates are the most likely to export fake electronic and electrical devices (see Table 2.29). Those are followed notably by Singapore, Korea and India.

Table 2.29. Relative likelihood of an economy to be a source of fake electronics and electrical equipment, 2011-2013

GTRIC-e for electronics and electrical equipment; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.790
United Arab Emirates	0.314
Singapore	0.271
Korea	0.221
India	0.199
Belize	0.189
Cambodia	0.183
Thailand	0.174
Egypt	0.169
Azerbaijan	0.159
Nigeria	0.149
Mexico	0.148

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

The top four provenance economies for counterfeit electronic and electrical equipment – China, Hong Kong (China), Singapore and the United Arab Emirates – are the same for both global trade and EU imports (Table 2.30). However, the role played by North African economies, such as Egypt, Algeria and Morocco, as provenance economies for fake electronics and electrical devices imported by the EU is far larger than for world trade.

Table 2.30. Relative likelihood of an economy to be a source of fake electronics and electrical equipment imported into the EU, 2011-2013

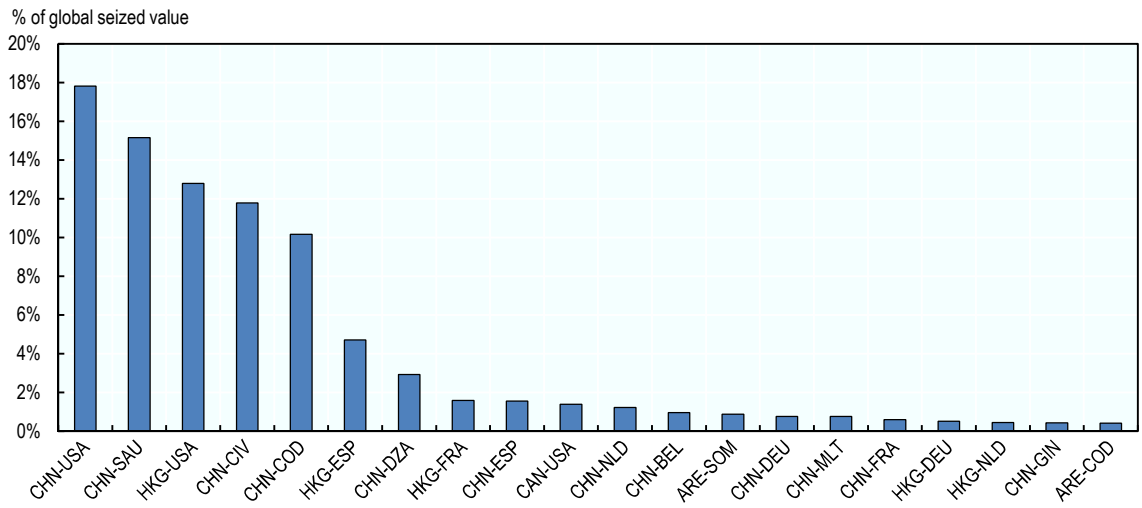
GTRIC-e for electronics and electrical equipment to the EU; average 2011-2013

Economy	GTRIC EU
China (People's Republic of)	1.000
Hong Kong (China)	0.967
Singapore	0.549
United Arab Emirates	0.443
Thailand	0.337
Egypt	0.324
Nigeria	0.298
Turkey	0.272
Algeria	0.252
Morocco	0.238
Cambodia	0.225

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Descriptive statistics on the most intensive trade routes presented in Figure 2.30 indicate that over the period 2011-2013, the largest shares of fake electronic and electrical good were exported from China and Hong Kong (China) to the US and the EU. Large trade flows of counterfeit electronic and electrical goods were also noticeable from China to Saudi Arabia; and from China and Saudi Arabia to African economies, such as Côte d'Ivoire, the Democratic Republic of Congo, Guinea and Somalia.

Figure 2.30. Top provenance-destination economies for fake electronics, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529768

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices confirms that China is the main producer of counterfeit electronics and electrical equipment (Table 2.31. See Annex C for complete lists of RCAT-e and RCAP-e indices), and exports them across the globe.

Singapore also appears as an important producer of counterfeit electronics, as well as being an additional potential transit point for China. Other producers of fake electronic and electrical goods are also located in Asia, including Thailand, Korea and India.

Finally, Mexico also appears to be a producer of fake electronics and electrical equipment. Compared to the other producing economies, the fake products tend to be exported almost exclusively to the US.

Table 2.31. Producers of counterfeit electronics and electrical equipment, 2011-2013

Producing economy	Destinations	Transport mode
China	Europe	Mail - Sea - Air
	US	Mail - Sea - Air
	Canada	Mail
	Australia	Mail - Air - Sea
	New Zealand	Mail - Sea
	Japan	Mail - Air - Sea
	Korea	Mail - Sea
	Africa (incl. Nigeria[*transit point*], Cameroon[*transit point*] and Ghana[*transit point*])	Sea
	Central America (incl. Belize[*transit point*], Guatemala[*transit point*], Panama[*transit point*])	Sea
	Latin America	Mail - Air - Sea
	Israel	Sea
	Jordan	Road - Sea
	Kuwait	Sea - Air
	Qatar	Sea - Air
	Saudi Arabia	Sea - Air
	Yemen	Sea - Air
	Hong Kong (China) [*transit point*]	Road
	Singapore[*transit point*]	Road
Singapore	EU	Mail
	US	Mail
	Central America (incl. Belize[*transit point*], Guatemala[*transit point*], Panama[*transit point*])	Sea
	Latin America	Mail - Sea
	Japan	Mail
	Qatar	Sea - Air
	Saudi Arabia	Sea - Air
Korea	EU	Mail - Air

	US	Mail - Sea
	Japan	Mail - Air
	Kuwait	Sea - Air
	Qatar	Sea - Air
	Saudi Arabia	Sea - Air
Thailand	EU	Mail - Air
	US	Mail
	Japan	Mail - Air
	Kuwait	Air
	Saudi Arabia	Sea
	Hong Kong (China) [*transit point*]	Road
	Singapore [*transit point*]	Road
India	EU	Mail - Air
	US	Mail - Air
	Latin America	Air
	Saudi Arabia	Sea - Air
	Somalia	Sea
Mexico	US	Road - Mail
	Saudi Arabia	Sea

Hong Kong (China) is the largest transit point for counterfeit electronics and electrical equipment produced in China and Thailand and re-exported throughout the globe (Table 2.32). As noted previously, Singapore is itself a producer of counterfeit electronic and electrical goods, and is also a key transit point for the fakes produced in China.

The United Arab Emirates is another central transit point in the global trade of counterfeit electronics and electrical devices. It mainly exports the fakes to Africa by sea in large containers, but also by road to other Middle East economies and by mail and air to the EU. Egypt and Turkey are also indicated as key transit points for counterfeit electronic and electrical products transiting to Middle Eastern economies and the EU. Note that for these three economies, it is not possible to determine where these fakes originated.

On the African continent, Nigeria, Cameroon and Guinea are transit points for fake electronics and electrical equipment produced in China for re-export to other Western African economies and the EU.

Finally, on the American continent, Belize, Guatemala and Panama are key transit points for counterfeit electronic and electrical goods produced in China and Singapore targeting the US. Note that some of these goods were already in transit in Hong Kong (China).

Table 2.32. Key transit points for counterfeit electronics and electrical equipment, 2011-2013

Provenance economy	Transit points	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	EU	Mail - Sea - Air
Thailand		US	Mail - Sea - Air
		Canada	Mail
		Australia	Mail
		New Zealand	Mail - Air
		Japan	Air - Mail
		Central and Latin America (incl. Belize[transit point], Guatemala[transit point], Panama[transit point])	Air - Mail
		Kuwait	Air
		Qatar	Air
		Saudi Arabia	Air - Sea
China	Singapore	EU	Mail
		US	Mail
		Central America (incl. Belize[transit point], Guatemala[transit point], Panama[transit point])	Sea
		Latin America	Mail - Sea
		Japan	Mail
		Qatar	Sea - Air
		Saudi Arabia	Sea - Air
?	United Arab Emirates	Africa (Somalia, Democratic Republic of the Congo, Djibouti, Mali, Guinea, Gabon)	Sea
		EU	Mail - Air
		Middle East (Bahrain, Jordan, Kuwait, Qatar, Saudi Arabia, Yemen)	Road - Air
?	Egypt	EU	Air
		Saudi Arabia	Sea - Air - Rail
		Yemen	Air
?	Turkey	EU	Air - Mail
		Qatar	Air - Sea
		Saudi Arabia	Sea
		Yemen	Sea
China	Nigeria, Cameroon and Ghana	EU	Sea - Air
		Western Africa	Road
China Hong Kong (China) Singapore	Belize, Guatemala, Panama	US	Sea - Air

Notes: The status of Algeria and Morocco, which export counterfeit electronics and electrical equipment to the EU, and Cambodia, which exports counterfeit electronics and electrical equipment to both the EU and the US, are undetermined. The indicators do not confirm if they are producers or not, and no data were received from their respective customs authorities to identify potential source economies in the case they are transit points.

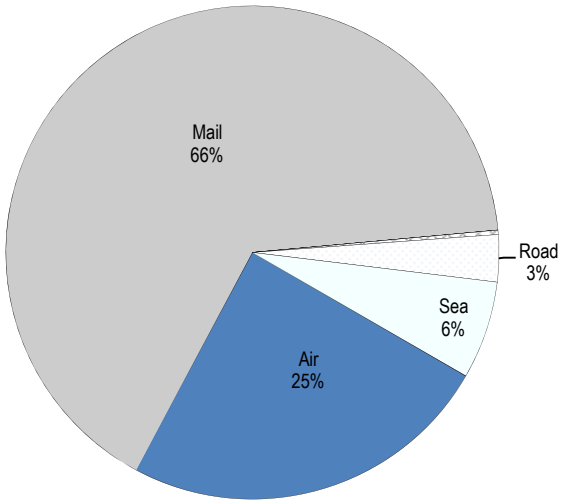
Transport modes and size of shipments

Over the period 2011-2013, the largest share of counterfeit electronics and electrical equipment was sent by mail, representing 66% of all global customs seizures of these products reported in the database (Figure 2.31). Shipments by air (25%) and sea (6%) were also significant.

Looking at the details, one can see that postal parcels were mostly used by counterfeiters located in producing economies and in Hong Kong (China) to reach developed economies, notably the US and those located in the EU (see Tables 2.31 and 2.32). Air and sea transport were used for counterfeit electronics and electrical products transported from producing economies to transit points, or from some transit points to the EU.

Figure 2.31. Conveyance methods for counterfeit electronics and electrical equipment, 2011-2013

As a percentage of total seizures.

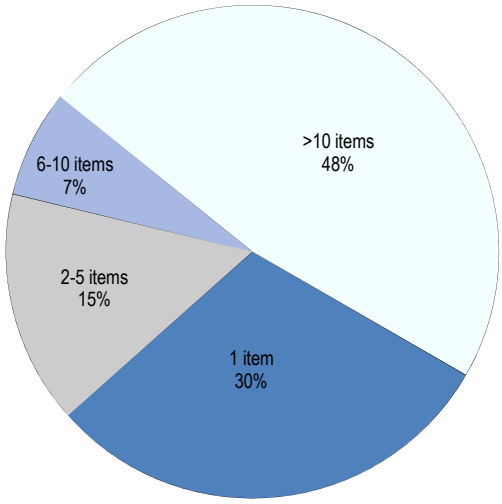


Statlink: http://dx.doi.org/10.1787/888933529787

Despite the predominance of postal parcels, around half the seized shipments of counterfeit electronic and electrical goods between 2011 and 2013 included more than 10 items (Figure 2.32).

Figure 2.32. Size of shipments of counterfeit electronics and electrical equipment, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529806

Trade routes for fake optical, photographic and medical equipment

Summary

China is the key producer of fake optical, photographic and medical equipment. Several East Asian economies – Bangladesh, Cambodia, Indonesia, Malaysia, Pakistan, Thailand and Viet Nam – also appear to be significant producers. Turkey produces counterfeit optical and photographic equipment targeted exclusively at the EU and Saudi Arabia.

Large Asian trade hubs – Hong Kong (China) and Singapore – are the main transit points for exporting counterfeit optical, photographic and medical equipment worldwide, while Morocco, Algeria, Albania and Mongolia are identified as transit points for fake sunglasses, optical products and medical equipment en route to the EU. Uruguay and the Dominican Republic appear to be important transit points for counterfeiters located in China and Hong Kong (China) to the US.

The lion's share of shipments of counterfeit sunglasses, photographic apparatus, and medical equipment is sent by mail and express services.

Overview of IP intensity and counterfeiting

The optical, photographic and medical equipment industry refers to the HS 90 product category. It includes notably cameras; photographic image projectors; or instruments and appliances used in medical, surgical, dental or veterinary sciences.

In 2013, the global trade value of optical, photographic and medical instruments was USD 561 billion, around 3% of total world trade in that year.

The industry is also very IP-intense. According to data provided by WIPO (WIPO, 2017), the number of patent applications for the sector was 277 406[15] in 2013, around 12% of all world patent applications. This made the optical, photographic and medical equipment industry the second-most intense in terms of patents.

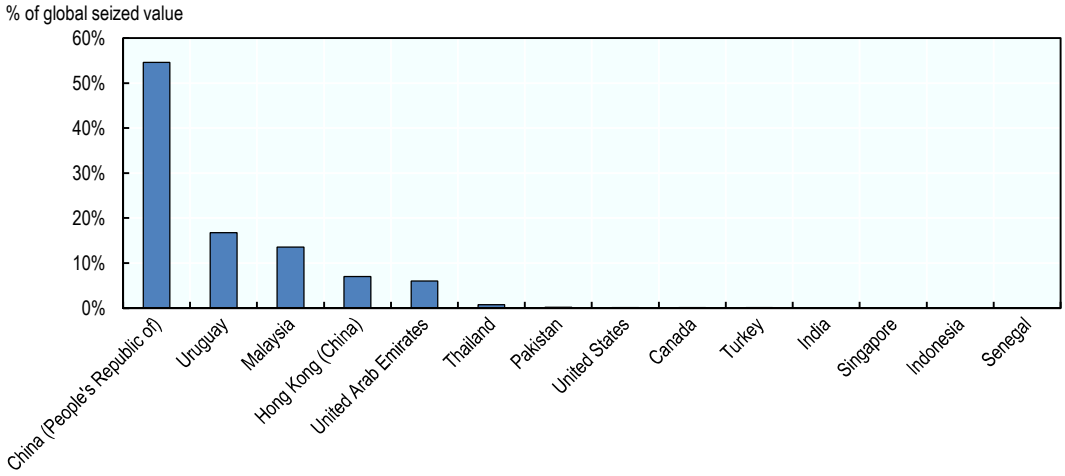
The high IP-intensity of optical, photographic and medical apparatus and their high degree of integration in the global economy make the industry highly vulnerable to counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit electronic devices and electrical equipment was worth USD 29.2 billion (EUR 21.4 billion) in 2013. This represents more than 5.2% of all trade in these products, and makes this industry the fourth-most affected by global counterfeiting and piracy in terms of value.

Examples of counterfeit optical, photographic and medical products recorded in the database of customs seizures are various. Over the period 2011-2013, customs authorities worldwide notably recorded seizures of counterfeit sunglasses, contact lenses, bulbs and tubes, lasers, telescopes, microscopes, veterinary instruments and apparatus, and medical supplies.

Provenance and destination economies

According to the data gathered in the OECD/EUIPO database on global customs seizures, China was by far the main provenance economy for counterfeit sunglasses, photographic products and medical equipment, being the origin of almost 55% of the global seized value of these products between 2011 and 2013 (Figure 2.33). It was followed by Uruguay (17%), Malaysia (14%), Hong Kong (China) (7%), the United Arab Emirates (6%) and Thailand (1%).

Figure 2.33. Top provenance economies for fake optical, photographic and medical equipment, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529825

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

Table 2.34. Relative likelihood of an economy to be a source of fake optical, photographic and medical equipment, 2011-2013

GTRIC-e for optical, photographic and medical equipment; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.624
Mongolia	0.500
Morocco	0.270
Singapore	0.190
Thailand	0.181
Greece	0.160
Bangladesh	0.154
Kuwait	0.153
Turkey	0.146
Cambodia	0.142

Table 2.33 Relative likelihood of an economy to be a source of fake optical, photographic and medical equipment, 2011-2013 *(continued)*

Pakistan	0.137
Albania	0.133
Malaysia	0.132
Viet Nam	0.130
Saudi Arabia	0.129

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

The GTRIC-e indices, which compare these customs seizures intensities with licit trade intensities for each provenance economy, confirm that China is the most likely to export fake sunglasses, photographic and medical apparatus (Table 2.33). Other implicated economies include the two large Asian trade hubs of Hong Kong (China) and Singapore, a group of developing Asian economies (Bangladesh, Cambodia, Indonesia, Malaysia, Pakistan Thailand, and Viet Nam), as well as Mongolia, Morocco, Greece, Kuwait, Turkey and Albania.

Interestingly, the list of top provenance economies for counterfeit optical, photographic and medical apparatus imported to the EU is very close to the list for world imports (Table 2.34), although Morocco and Turkey play a stronger role in the EU trade, and Senegal is also involved.

Table 2.34. Relative likelihood of an economy to be a source of fake optical, photographic and medical equipment imported into the EU, 2011-2013

GTRIC-e for optical, photographic and medical equipment to the EU; average 2011-2013

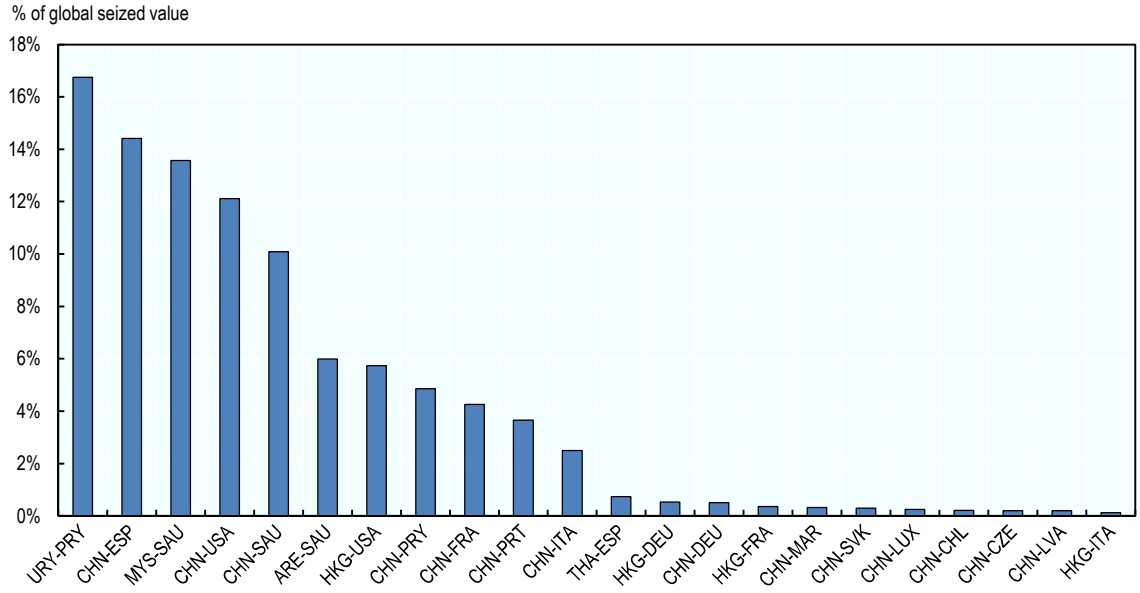
Economy	GTRIC EU
China (People's Republic of)	1.000
Mongolia	0.740
Hong Kong (China)	0.707
Morocco	0.374
Singapore	0.233
Thailand	0.221
Turkey	0.219
Senegal	0.177
Pakistan	0.145
Greece	0.131
Malaysia	0.126

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Descriptive statistics on the most intensive trade routes presented in Figure 2.34 indicate that over the period 2011-2013, the largest share of fake sunglasses, photographic and medical equipment was exported from China and Hong Kong (China) to the US, the EU and Saudi Arabia. Large trade flows of counterfeit sunglasses,

photographic and medical equipment were also apparent from Malaysia and the United Arab Emirates to Saudi Arabia, and from China and Uruguay to Paraguay.

Figure 2.34. Top provenance- destination economies for fake optical, photographic and medical equipment, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529844

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates clearly that China is the main producer of fake optical, photographic and medical equipment (Table 2.35. See Annex C for complete lists of RCAT-e and RCAP-e indices). The group of developing East Asian economies – Bangladesh, Cambodia, Malaysia, Pakistan, Thailand, and Viet Nam – also appear as important producers. Counterfeiters in China and these six developing economies export counterfeit sunglasses, photographic apparatus and medical equipment direct to Europe, the US, and Middle East (e.g. Kuwait, Saudi Arabia, Qatar). Some of them may also use Singapore or Hong Kong (China) as transit points (see below). Finally, note that, compared to the other Asian producing economies, the scope of destination economies for the fake sunglasses, photographic and medical apparatus exported from China is broader, and includes Japan, Korea, North African economies, such as Morocco and Algeria, and numerous economies throughout the Middle East, the Caribbean and South America.

Finally, Turkey is also indicated as a producing economy of counterfeit sunglasses, optical and photographic equipment, mainly targeted at the EU and Saudi Arabia.

Table 2.35 Producers of counterfeit optical, photographic and medical equipment, 2011-2013

Producing economy	Destinations	Transport mode
China	Europe	Mail - Air - Sea
	US	Mail - Sea
	Canada	Mail
	Japan	Mail - Sea
	Korea	Mail - Sea
	South America (incl. Uruguay [*transit point*])	Mail - Sea - Air
	The Caribbean (incl. Dominican Republic [*transit point*])	Sea
	Morocco [*transit point*]	Air - Sea
	Algeria [*transit point*]	Air - Sea
	Jordan	Sea
	Kuwait [*transit point*]	Air - Sea
	Saudi Arabia	Sea - Air - Rail
	Qatar	Air - Sea
	Hong Kong (China) [*transit point*]	Road
Bangladesh, Cambodia, Malaysia, Pakistan Thailand, and Viet Nam	EU	Mail - Air
	US	?
	Saudi Arabia	Sea
	Singapore	Road
Turkey	EU	Air - Mail - Road
	Saudi Arabia	Sea

Hong Kong (China) and Singapore are indicated as the main transit points for exporting counterfeit optical, photographic and medical worldwide (Table 2.36). They receive the fakes from China and some of the smaller Asian producer economies, and re-export them throughout the globe, most notably to the EU, the US, Kuwait and Saudi Arabia.

The methodology used in this study also clearly identifies Kuwait as a key transit point in the global trade of counterfeit optical, photographic and medical equipment. It receives fake from China and Hong Kong (China) for re-export to the EU, the US and North Africa, notably Morocco and Algeria, which are also indicated as onward transit points for the EU.

Alongside Morocco and Algeria, Albania and Mongolia are other transit points for the fake sunglasses, optical products and medical equipment transported to the EU. Finally, Uruguay and the Dominican Republic appear to be important transit points for counterfeiters sending fakes from China and Hong Kong (China) to the South American continent and the US.

Table 2.36. Key transit points for optical, photographic and medical equipment, 2011-2013

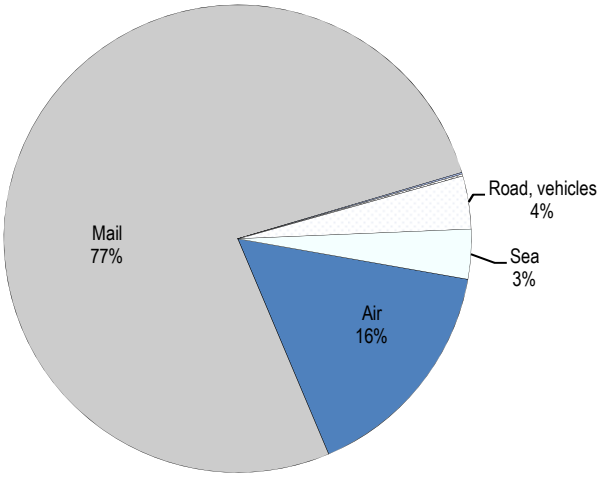
Provenance economy	Transit point	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	EU	Air - Mail
		US	Mail - Air
		Canada	Mail
		Australia	Mail
		South America (incl. Uruguay [*transit point*])	Mail - Air
		Algeria [*transit point*]	Air
		Kuwait [*transit point*]	Air
China Cambodia Indonesia Malaysia Viet Nam Thailand	Singapore	EU US Saudi Arabia Kuwait [*transit point*]	Mail - Air Mail - Air Sea Sea
China Hong Kong (China) [*transit point*]	Kuwait	EU US North Africa (incl. Algeria [*transit point*] and Morocco[*transit point*])	Road ? Sea - Road
?	Albania	EU	Road - Sea
China Hong Kong (China) [*transit point*]	Morocco and Algeria	EU	Air - Sea
?	Mongolia	EU	Mail
China	Dominican Republic	US	?
China Hong Kong (China)	Uruguay	South America (e.g. Paraguay)	Road

Transport modes and size of shipments

Over the period 2011-2013, the largest share of counterfeit sunglasses, photographic apparatus and medical equipment was sent by mail (77% of all global customs seizures of these products reported in the database; Figure 2.35). The share of air shipments (16%) was also significant. The average size of shipments was not particularly small (Figure 2.36).

Figure 2.35. Conveyance methods for counterfeit sunglasses, photographic and medical apparatus, 2011-2013

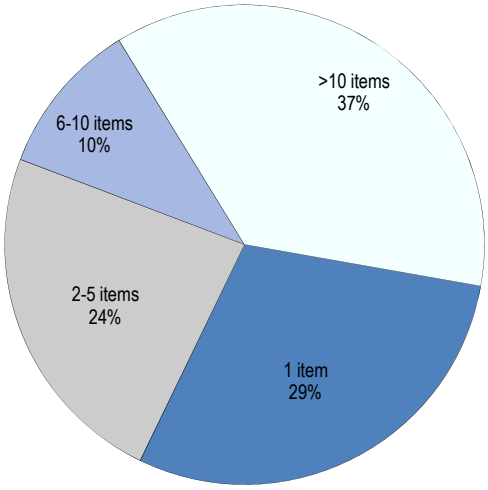
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529863

Figure 2.36. Size of shipments of counterfeit optical, photographic and medical equipments, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529882

Trade routes for fake toys, games and sports equipment

Summary

China is the main producing economy of fake toys, games and sports equipment. It produces and exports them throughout the world, using a significant number of transit points, such as Hong Kong (China), Singapore and Macau (China). Other producing economies include India and Pakistan. Regionally, Turkey and Morocco are producers shipping to the EU; Mexico is also identified as a potential producer targeting the US.

Apart from Hong Kong (China), Singapore and Macau (China), there are several other transit points for trade in fake toys, including Saudi Arabia, Kuwait and Bahrain. They receive the fakes direct from China, India, and Pakistan, and indirectly from Hong Kong (China), and re-export them to the EU, the US, and North and Central Africa.

On a regional scale, Morocco, Lebanon, and Armenia also appear as important transit points for the fake toys, games and sports equipment en route from China, Hong Kong (China) and Turkey to Europe. Finally, Uruguay and Paraguay are transit points for products made in China and Hong Kong (China) targeted to the US market.

Overview of IP intensity and counterfeiting

The toys, games and sports equipment industry refers to the HS 95 product category. This category includes notably tricycles, scooters, pedal cars and similar wheeled toys; dolls; reduced-size (scale) models; puzzles of all kinds; video game consoles and machines; pintables, billiards, special tables for casino games; festive, carnival or other entertainment articles; gymnastics, athletics, other sports (including table tennis) or outdoor games equipment; and fishing rods, fish-hooks and other line fishing tackle.

In 2013, the global trade value of toys, games and sports equipment was USD 88.3 billion, around 0.5% of total world trade in that year.

The industry is also relatively IP intense. According to data provided by WIPO (WIPO, 2017), the number of trademark applications for the toys, games and sports equipment industry was up to 70 718 in 2013,[16] around 2% of all world trademark applications registered that year. This placed the industry in third place for trademark intensity.

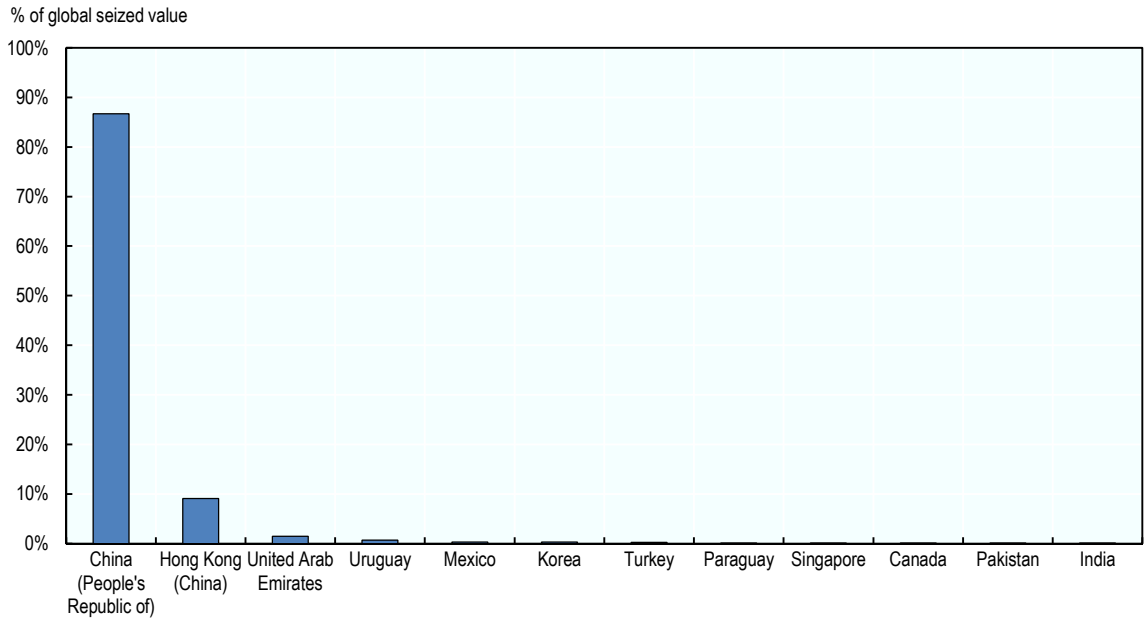
The high IP-intensity of the industry of toys, games and sports equipment and its high degree of integration in the global economy make it particularly vulnerable to the threat of counterfeiting. According to calculations for the OECD-EUIPO (2016) study, global trade in counterfeit toys, games and sports equipment was worth USD 9.72 billion (EUR 7.12 billion) in 2013. This represents more than 11% of all trade in those products, making this industry the second-most affected by global counterfeiting and piracy in relative terms (i.e. as a percentage of trade within the product category).

Examples of counterfeit toys, games and sports equipment recorded in the database of customs seizures are various. Over the period 2011-2013, customs authorities worldwide mainly seized counterfeit video game consoles and controllers, balls and balloons, bicycles, boxing gloves, car models, cards, exercise equipment, figures, plastic toys sticks, skateboards, robots and dolls.

Provenance and destination economies

According to the OECD/EUIPO database on global customs seizures, China was by far the main provenance economy of counterfeit toys, games and sports equipment, being the origin of almost 85% of the global seized value of these products between 2011 and 2013 (Figure 2.37). It was followed by Hong Kong (China) (9%) and the United Arab Emirates (2%).

Figure 2.37. Top provenance economies for counterfeit toys and games, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529901

Note: The EU members are the points of entry of fake goods to the EU, and consequently are excluded from further analysis.

The GTRIC-e indices, which compare these customs seizures intensities with licit trade intensities for each provenance economy, confirm that China is the most likely to export fake toys, games and sports equipment (Table 2.37). Also implicated are the three large Asian trade hubs – Hong Kong (China), Singapore and Macau (China); three economies from the Middle East (Bahrain, Saudi Arabia and the United Arab Emirates); three South American economies (Uruguay, Ecuador and Paraguay); and some economies located close to the EU frontier: Armenia, Morocco and Turkey.

Table 2.37. Relative likelihood of an economy to be a source of fake toys, games and sports equipment, 2011-2013

GTRIC-e for toys, games and sports equipment; average 2011-2013

Economy	GTRIC world
China (People's Republic of)	1.000
Hong Kong (China)	0.555
Singapore	0.358
Bahrain	0.341
Saudi Arabia	0.262
Uruguay	0.257
Ecuador	0.250
United Arab Emirates	0.228
Armenia	0.178
Macau (China)	0.175
Paraguay	0.152
Greece	0.136
India	0.102
Morocco	0.095
Turkey	0.092

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

The list of top provenance economies for the EU identified from the GTRIC-e methodology is reported in Table 2.38. China, Hong Kong (China), Singapore and the United Arab Emirates are also the most likely to be provenance economies for counterfeit toys, games, and sports equipment arriving in the EU. They are followed by Armenia, Turkey, and Lebanon; a group of developing Asian economies (India, Pakistan, Philippines and Thailand); and Morocco.

Table 2.38. Relative likelihood of an economy to be a source of fake toys, games and sports equipment imported into the EU, 2011-2013

GTRIC-e for toys, games and sports equipment to the EU; average 2011-2013

Economy	GTRIC EU
China (People's Republic of)	1.000
Hong Kong (China)	0.603
Singapore	0.484
United Arab Emirates	0.302
Armenia	0.204
Lebanon	0.173
Turkey	0.159
Greece	0.155

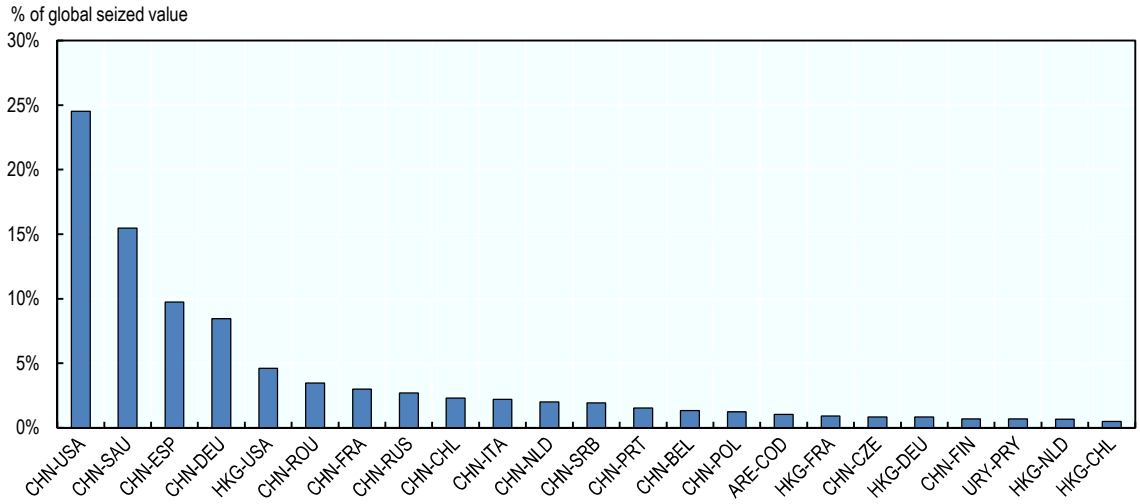
Table 2.38 Relative likelihood of an economy to be a source of fake toys, games and sports equipment imported into the EU, 2011-2013 *(continued)*

Thailand	0.121
Morocco	0.115
Pakistan	0.094
India	0.092
Philippines	0.092

Note: A higher score on the GTRIC Index corresponds to a greater likelihood that the economy in question is a source of counterfeit goods.

Descriptive statistics on the most intensive trade routes presented in Figure 2.38 indicate that over the period 2011-2013, the largest share of fake toys, games and sports equipment was exported from China and Hong Kong (China) to the US, the EU and Saudi Arabia.

Figure 2.38. Top provenance-destination economies for counterfeit toys and games, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529920

Note: See Annex C for a full list of ISO codes of countries and territories.

Producers and transit points

Comparing the GTRIC-e indices with the RCAP-e and RCAT-e indices indicates clearly that China is the main producing economy of fake toys, games and sports equipment (Table 2.39. See Annex C for complete lists of RCAT-e and RCAP-e indices). It produces and exports these fakes throughout the world, using a significant number of transit points.

India and Pakistan are also identified as key producing economies, mainly for export to the US, EU, Mexico, Saudi Arabia and Kuwait. Turkey and Morocco are also indicated as producers of counterfeit toys, games and sports equipment, mainly targeted at Europe.

Table 2.39. Producers of counterfeit toys, games and sports equipment, 2011-2013

Producing economy	Destinations	Transport mode
China	Europe	Mail - Sea - Air - Road
	US	Mail - Sea - Air
	Australia	Sea
	New Zealand	Sea
	Japan	Mail - Sea - Air
	Korea	Sea
	South America (incl. Mexico [*transit point*], Uruguay [*transit point*], Paraguay [*transit point*])	Mail - Sea - Air
	the Caribbean	Sea
	North and West Africa (incl. Morocco [*transit point*])	Sea
	Kuwait	Sea
	Lebanon [*transit point*]	Sea
	Qatar	Sea
	Saudi Arabia [*transit point*]	Sea - Rail
	Yemen	Sea
	Hong Kong (China) [*transit point*]	Road
	Macau (China) [*transit point*]	Road
India and Pakistan	EU	Mail - Sea
	US	Sea - Mail
	Mexico [*transit point*]	Sea
	Kuwait	Sea
	Saudi Arabia [*transit point*]	Sea - Rail
Turkey	EU	Road
Morocco	EU	?

Hong Kong (China), Singapore and Macau (China) are indicated as the main transit points for counterfeit toys, games and sports equipment worldwide (Table 2.40). They re-export them throughout the globe, especially to the EU and the US. Unlike the other trade hubs, counterfeiters in Hong Kong (China) appear to use several transit points in South America (Mexico, Uruguay and Paraguay) to reach the US; the use Saudi Arabia to reach other Middle Eastern economies, North Africa, the EU and the US; and they also use Greece and Latvia to reach the EU.

The methodology used in this study clearly identifies Saudi Arabia, Kuwait and Bahrain as key transit points in the global trade of counterfeit toys, games and sports equipment. They receive the fakes directly from China, India, and Pakistan, and indirectly from Hong Kong (China), and re-export them to the EU, the US, and North and Central Africa.

Morocco, Lebanon and Armenia also appear as important transit points for the fake toys, games and sports equipment that transit from China, Hong Kong (China) and Turkey en route to Europe. Finally, Mexico and Paraguay are transit points for fakes en route from China and Hong Kong (China) to the US.

Table 2.40. Transit points for counterfeit toys, games, and sports equipment, 2011-2013

Provenance economy	Transit point	Destinations	Transport mode from transit to destination
China	Hong Kong (China)	Europe	Mail - Air
		US	Mail - Air
		Australia	Mail - Air
		Japan	Air - Sea
		Korea	Sea
		South America (incl. Mexico[*transit point*], Uruguay[*transit point*], Paraguay[*transit point*])	Sea - Air
		Saudi Arabia[*transit point*]	Sea
		West Africa	Sea - Air
China	Macau (China)	US	?
?	Singapore	EU	Mail - Air - Sea
		US	Mail - Air
China Hong Kong (China) [*transit point*] India Pakistan United Arab Emirates[*transit point*] Bahrain[*transit point*]	Saudi Arabia	EU	?
		US	?
		North Africa	Road
		Qatar	Road
?	United Arab Emirates	EU	Sea
		North and Central Africa	Sea
		Kuwait	Sea - Road
		Saudi Arabia[*transit point*]	Road
?	Bahrain	Kuwait	Road
		Saudi Arabia[*transit point*]	Road
China Morocco	Morocco	EU	?
China	Lebanon	EU	?
?	Armenia	Europe	Road
China Hong Kong (China) [*transit point*]	Paraguay and Mexico	US	Road - Sea

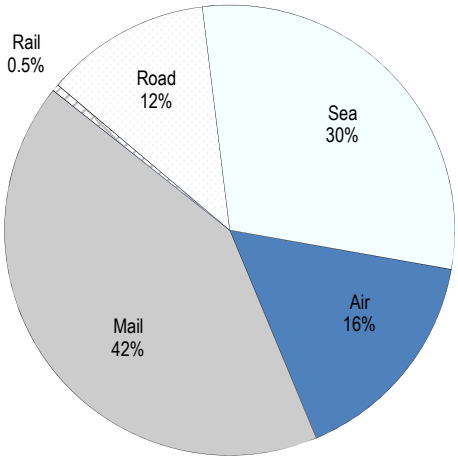
Notes: The situation of Ecuador, which exports counterfeit toys, games and sports equipment to Korea and some EU countries (e.g. Netherlands and Italy), is undetermined. The indicators cannot confirm its production status, and the data are not able to identify the economies from which the fake toys and games are first imported in the case it is a transit point.

Transports modes and size of shipments

Over the period 2011-2013, the largest share of counterfeit toys, games and sports equipment was sent by mail (accounting for 42% of all global customs seizures of these products reported in the database; Figure 2.39). However, the shares of shipments by sea (30%), air (16%) and road (12%) were also very significant. Consequently, the average size of shipments of fake toys, games and sports equipment tends to be either very small (e.g. one item) or very large (more than 10 items) (Figure 2.40).

Figure 2.39. Conveyance methods for counterfeit toys and games, 2011-2013

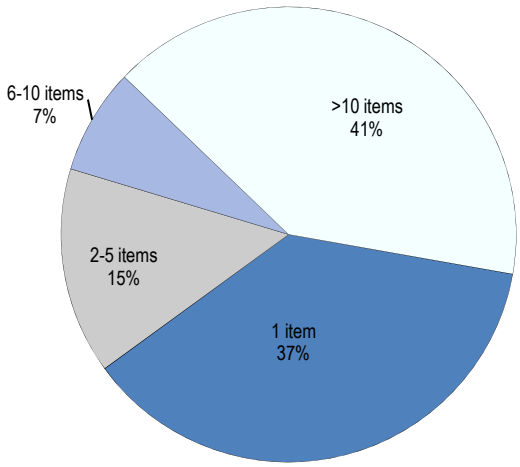
As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529939

Figure 2.40. Size of shipments of counterfeit toys and games, 2011-2013

As a percentage of total seizures.



Statlink: http://dx.doi.org/10.1787/888933529958

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Chapter 3. Conclusions and next steps

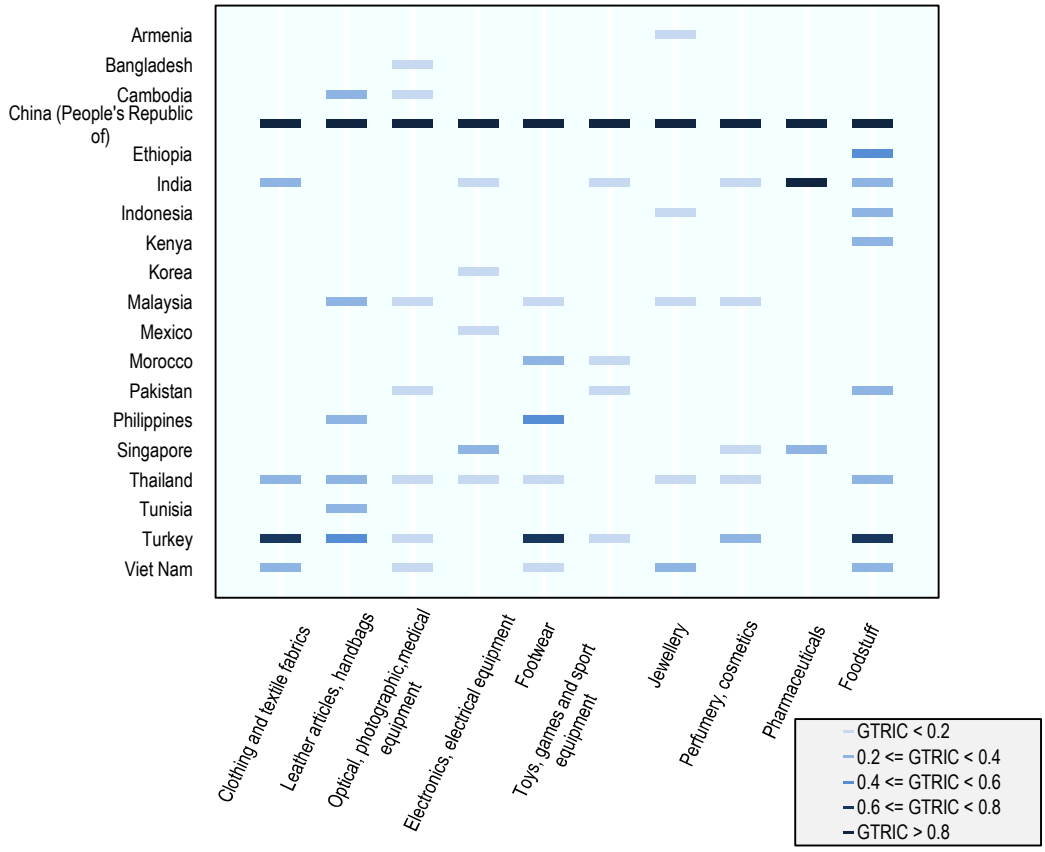
This chapter offers an overview of the findings presented in Chapter 2. While the data show large variations in experiences across sectors, some general patterns are observed. These include the identification of key producer countries, as well as key transit hubs. The chapter draws out some policy implications of these findings, then lists steps that could be taken to enhance future work.

This study has examined the complex routes through which counterfeit and pirated goods are traded, focusing on ten main product types which are particularly vulnerable to counterfeiting. These include fast-moving consumer goods such as candy bars and shampoo, as well as business-to-business products, such as spare parts and computer chips. Trade in these products combined accounts for USD 284 billion (EUR 208 billion) in 2013, more than a half the total global estimated trade in fake goods.

The data show large variations in experiences across sectors. For example, counterfeit foodstuff is shipped in large packages, whereas electrical components and jewellery are mostly shipped in small parcels. Electronics and cosmetics are trafficked mostly to OECD countries, such as the EU countries and the US, whereas pharmaceuticals and foodstuff are also shipped in large quantities to developing, sub-Saharan economies.

Despite these differences, some general patterns can be distinguished. Globally, in nine out of ten product categories, China emerges as the key producer of counterfeit goods, with India being a more important producer of fake pharmaceuticals (Figure 3.1). Several East Asian economies – including India, Thailand, Malaysia, Pakistan and Viet Nam – have been identified as important producers in many sectors, although their role is much less significant than China. Finally, Turkey appears to be a relatively important producer, especially for fake leather goods, foodstuff and cosmetics.

Figure 3.1. Economies by likelihood of being a producer of fake goods by industries, 2011-2013

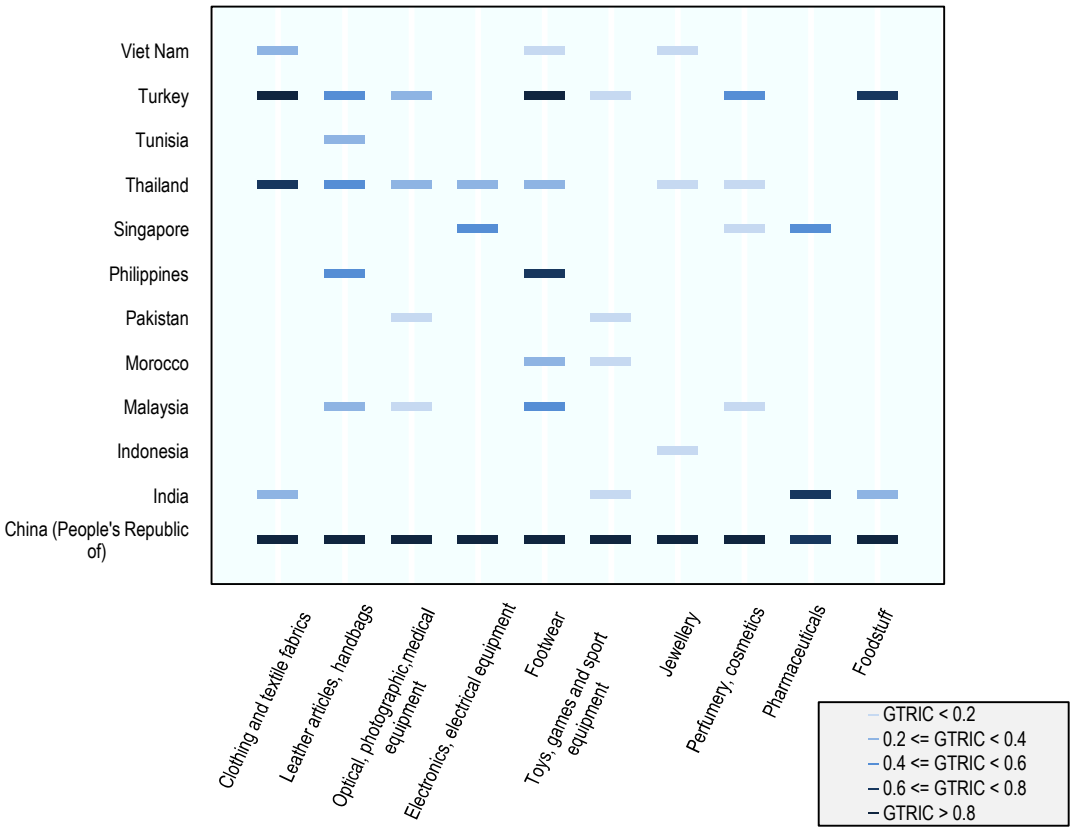


Statlink: http://dx.doi.org/10.1787/888933529977

Note: The darker fields indicate greater likelihood that an economy is a producer of counterfeit goods in a given product category.

From the EU perspective, China is the major producer of counterfeit and pirated products across all categories analysed for the EU Common Market, while India is an equally important producer of fake pharmaceuticals (Figure 3.2). As with the global findings for the production of counterfeits, several East Asian economies are found to produce fake goods destined for Europe as well, but on a smaller scale and in specific categories of goods. For example Malaysia and the Philippines are producers of counterfeit leather and footwear, while Thailand is seen as a producer of fake clothing and electronics. In the Middle-East, Turkey is a relatively important producer of fake leather, handbags clothing, foodstuff and footwear products that often make their way to the EU by land crossing.

Figure 3.2. Economies by likelihood of being a producer of fake goods by industries; the EU perspective, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933529996

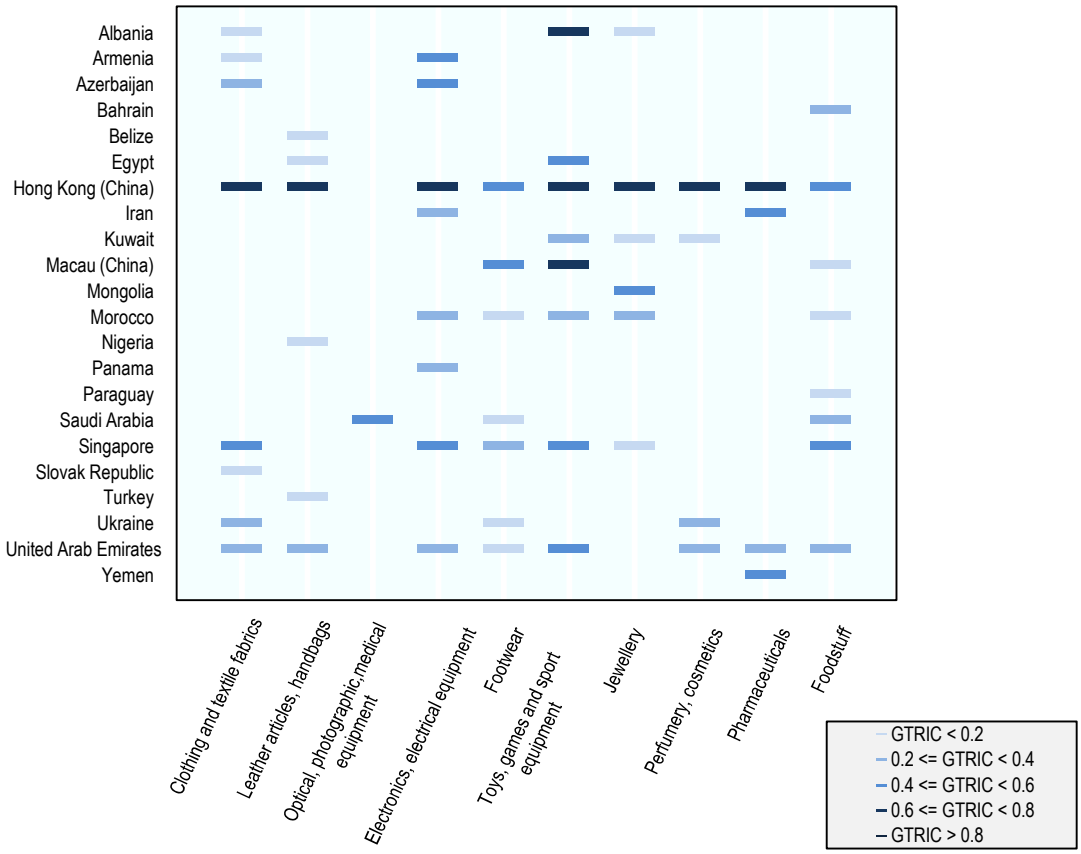
Note: The darker fields indicate greater likelihood that an economy is a producer of counterfeit goods that are shipped to the EU in a given product category.

The use of transit points has also been investigated, given their role in easing the trade in fake goods. This includes falsifying documents in ways that camouflage the original point of departure; establishing distribution centres for counterfeit and pirated goods; and repackaging or re-labelling goods. In addition while imports of counterfeit goods are, in most cases, targeted by local enforcement authorities, goods in transit are often not within their scope, which means they are less likely to be intercepted.

The analysis of transport modes helped to identify several hubs that are acting as transhipment centres for fake goods. In general the goods arrive in large quantities in containers, and are sent then sent on to their end market in small parcels by post or courier services. There are three global transit points that specialise in repackaging fake goods from containers to small postal or courier shipments: Hong Kong (China), Singapore and the United Arab Emirates (Figure 3.3). These hubs specialise in a wide range of counterfeit products, such as foodstuff; perfumery and cosmetics; leather articles and handbags; optical, photographic and medical equipment; and electronics etc. In addition, there are some important regional transit points. For example several Middle Eastern economies (i.e. the UAE, Saudi Arabia and Yemen) are important transit points for trade in fake goods to Africa. Three transit points – Albania, Egypt, Morocco and

Ukraine – were identified for shipments of fakes to the EU. Finally, Panama is an important transit point for fakes shipped to the United States.

Figure 3.3. Economies by likelihood of being a transit point for trade in fake goods, 2011-2013

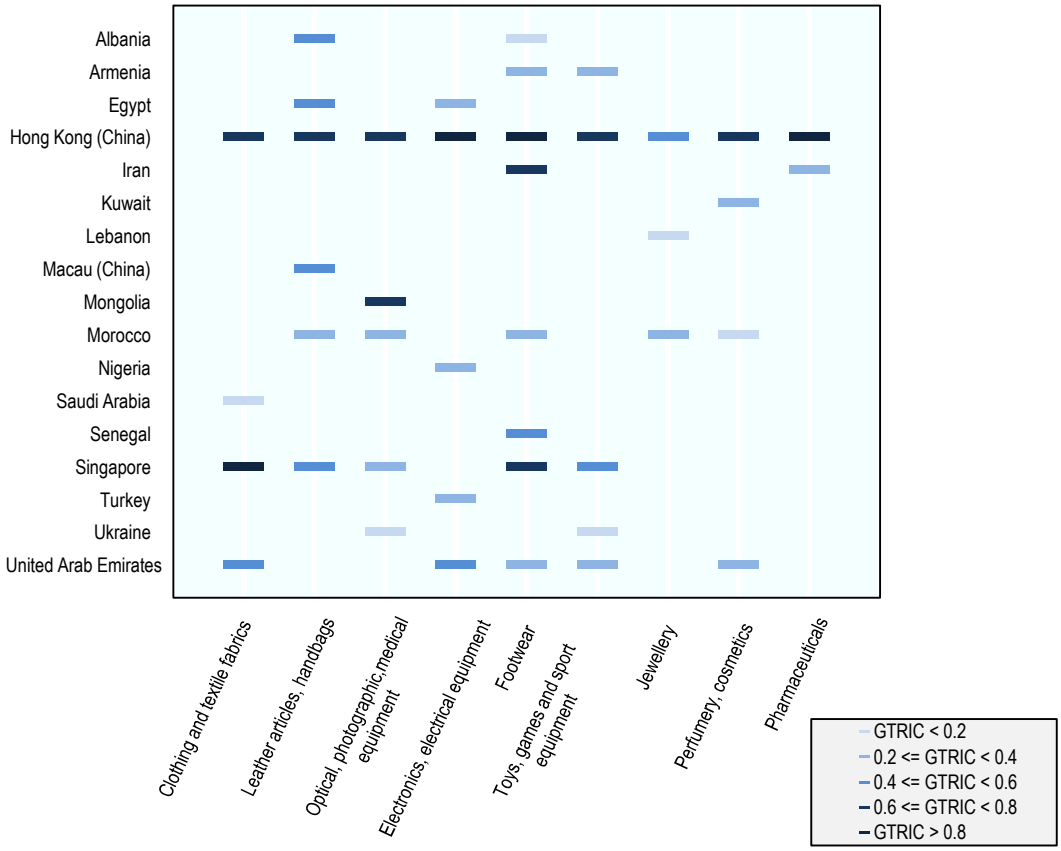


Statlink: http://dx.doi.org/10.1787/888933530015

Note: The darker fields indicate greater likelihood that an economy is a transit point for trade in counterfeit goods in a given product category.

The additional analysis of transit points from the EU perspective confirms the above-mentioned findings (Figure 3.4). Hong Kong (China), Singapore and the United Arab Emirates are the main transit points for fakes around the globe. These hubs are found to specialise in the repackaging of counterfeits that are taken from large shipping containers and placed into smaller postal and courier packages that that are then sent onwards to all economies including the EU. In addition to these global hubs, there are at least four economies that function as exclusive transit points for shipments of counterfeits into the EU: Morocco (leather goods, footwear and optical equipment); Albania (leather goods and perfumes); Egypt (leather goods and electronic equipment) and Ukraine (jewellery, perfumes and cosmetics).

Figure 3.4. Economies by likelihood of being a transit point for trade in fake goods to the EU, 2011-2013



Statlink: http://dx.doi.org/10.1787/888933530034

Note: The darker fields indicate greater likelihood that an economy is a transit point for counterfeit goods exported to the EU in a given product category.

More in-depth analysis in three areas will be crucial for developing efficient enforcement and governance frameworks to counter the substantial risks posed:

- the role of free trade zones in transhipments
- the detection problem posed by small shipments
- the economic features of provenance economies, including the quantitative relationship between the intensities of counterfeiting and indices of free trade, quality of governance, public sector integrity, etc.

Free trade zones, such as Jafza in the UAE, frequently feature among the list of transit points. While imports of counterfeit goods are, in most cases, targeted by local enforcement authorities, goods in transit are not within their scope, which means they are less likely to be intercepted. Further research is needed on the role of free trade zones in counterfeit and pirated trade. This research could build on the dataset developed in the main study to examine the scope and volume of counterfeit and pirated trade in the

context of selected free trade zones. It could also scan the key enablers of counterfeiting and piracy in free trade zones, such as more relaxed oversight, softened customs controls and a lack of transparency.

Small shipments are clearly a way to avoid detection and minimise the risk of sanctions. Checking and detaining them raises costs for customs and, consequently, introduces additional significant challenges for enforcement authorities. The large volume of small shipments sent by mail or express seems to be related to the recent fast growth of the Internet, and particularly e-commerce solutions. For enforcement authorities, postal and express shipments containing counterfeit products tend to be more difficult to detect and to detain. Consequently, the use of e-commerce for facilitating counterfeit commerce imposes an additional significant burden on enforcement authorities.

The role of the online environment and e-commerce in the context of counterfeiting of physical goods is dynamic and more research is needed to uncover its impact on counterfeiting and piracy activities.

Finally, more quantitative research is needed to improve the precision of assessments of the role of economies in trade in counterfeit and pirated goods. Information developed in this study shows that some economies tend to specialise in the production of infringing goods, whereas others emerge as key transit points through which infringing goods pass. More analysis is needed to develop a fuller quantitative picture of counterfeit trade at the national level, and to determine why counterfeit profiles look different for economies that otherwise seem similar. The analysis could for example investigate the quantitative relationship between the intensities of counterfeiting and indices of free trade, the quality of governance and the integrity of public sector.

In addition to the three areas discussed above, the analysis presented could be used to help develop a more effective set of enforcement and governance responses – for transit points and for specific producing economies. Among the issues to be addressed are the adequacy of deterrent penalties, trade-based money laundering, and other factors related to transnational crime.

Annex A. Data

The main producer economies of fakes and the key transit points are determined using statistical "filters" (see Annex B). For each of the ten product categories explored in this report, this is done based on three sources of information:

- data on seizures of counterfeit and pirated goods,
- international trade statistics, and
- industrial activity data.

An important data limitation should be highlighted in this context. While the quality of data on customs seizures of infringing products received from member countries of the EU and from the US is very high, the data from South American, African, Middle-East and Asian customs authorities are of insufficient quality. Hence the mapping exercise for the EU and the US as destinations is relatively precise, but a precise charting of trade routes and the modes of transport for the other regions is not possible. For transparency purposes, all data gaps were highlighted throughout the analysis.

In addition, the datasets identify a set of EU member countries as provenances. However, these identifications are based on DG TAXUD data, and refer to goods coming from outside the EU that were seized in a different member state than the entry point to the EU. This is because DG TAXUD data refer only to imports to the EU from third countries, and do not include the internal EU trade. Put differently, the EU members that are labelled as provenance economies refer to the points of entry of fake goods to the EU. These economies are not included in the analysis.

Data on seizures of counterfeit and pirated goods

The database on customs seizures is the critical quantitative input to this study. It was constructed from three separate datasets received from the WCO, from DG TAXUD of the European Commission, and from the US Department of Homeland Security. The database includes detailed information on seizures of IPR-infringing goods made by customs officers in 99 economies around the world between 2011 and 2013. For each year, there are more than 100 000 observations in the database; in most cases one observation corresponds to one customs' seizure.

The database contains a wealth of information about the IPR-infringing goods that can be used for quantitative and qualitative analysis. In most cases the database reports, for each seizure: date of seizure, mode of transport of fake products, departure and destination economies, general statistical category of seized goods as well as their detailed description, name of legitimate brand owner, number of seized products and their approximate value.

Concerning valuation of seized goods, there are two principles for reporting the value of counterfeit and pirated goods: 1) declared value (value indicated on customs declarations), which corresponds to values reported in the general trade statistics; and 2)

replacement value (price of original goods). The structured interviews with customs officials and the descriptive analysis of values of selected products conducted in OECD-EUIPO (2016) revealed that the declared values are reported in most cases.

International trade statistics

The trade statistics are based on the United Nations (UN) Comtrade database (landed customs value). With 171 reporting economies and 247 partner economies (76 economies in addition to reporting economies), the database covers the largest part of world trade and is considered the most comprehensive trade database available. Products are registered on a six-digit Harmonized System (HS) basis, and can then be aggregated.

This study uses two different types of trade statistics provided by the UN Comtrade database. First, the calculations of the General Trade Related Indices (GTRIC) are based on import data. Second, the identification of potential transit points are based on re-export data. Re-exports are exports of foreign goods in the same state as previously imported, i.e., that have not acquired domestic origin through processing.

In most economies, import statistics are compiled from the records filed with local customs authorities. This is particularly important in the context of this report as data on customs seizures of infringing products originate from the same source – customs offices at the destination. This reinforces the choice for import statistics as the reference point for the calculation of the GTRIC indices, as both imports data and seizure data refer to the same observed incoming trade flows.

Industrial activity data

The identification of potential producer points within each product category is based on data on industrial activity provided by the UNIDO Industrial Statistics Database (INDSTAT4). This study takes advantage of the cross-country comparability of the data on industrial output and value-added included in the INDSTAT4 database to distinguish a producing economy from a potential transit point for each of the product categories studied. The database contains seven principal indicators of industrial statistics (number of establishments, number of employees, wages and salaries, output, value added, gross fixed capital formation, and number of female employees) at the 4-digit level of the International Standard Industrial Classification of All Economic Activities (ISIC). The latter comprises in total more than 150 manufacturing sectors and sub-sectors.

Annex B. Methodology

The main producing economies and key transit points for counterfeit and pirated goods were identified for each of the selected industries: foodstuff; pharmaceuticals; perfumery and cosmetics; leather articles and handbags; clothing and textile fabrics; footwear; jewellery; electronics and electrical equipment; optical, photographic and medical apparatus; toys and games.

For each product category the exercise was? carried out in several steps:

1) Economies were ranked according to their propensity to be an economy of provenance for counterfeit goods in trade in this product. The resulting index is called GTRIC-e.

2) An indicator of the relative comparative advantage for producing a given good was calculated for each economy (RCAP-e). This is the first "filter" to be used in the analysis.

3) For each economy an indicator of the relative comparative advantage for being a transit point in global trade in a given good was calculated (RCAT-e). This is the second "filter" to be used in the analysis.

4) Both filters (RCAP-e and RCAT-e indicators) were applied for every economy with a high GTRIC-e score. This indicates whether the given economy is a producing one, or a potential transit point.

5) Some additional descriptive statistical analysis checked the modes of transport and the size of shipments on the selected trade routes.

It should be highlighted that the framework presented below relies on a set of methodological assumptions. For transparency purposes all are spelt out in the text.

Construction of GTRIC-e for each product category

For each product category the first step was to rank all the known provenance economies by their relative intensity of exporting fakes. This distinguished the key transit points in trade with fake goods in a given product category. Each of these key points then was further investigated to determine its exact role in trade in fakes in the analysed sector.

The most intense provenance economies were identified using an index that ranked them according to their relative propensity to be an economy of provenance for counterfeit goods (GTRIC-e). The index is based on the data on global customs seizures and data on imports. It takes into account 1) the absolute value of exports of fakes from a given economy (in USD); and 2) the share of fakes in total exports in a given product category from a given economy.

The construction of GTRIC-e directly relied on the methodology introduced in the OECD-EUIPO (2016) study. A detailed description of the methodology used to calculate the GTRIC-e is provided below.

Importantly, two assumptions are made to calculate the GTRIC vectors. The first is that the volume of seizures of a given product or from a given source economy is positively correlated with the actual intensity of trade in counterfeit and pirated goods in that product category or from that economy. The second assumption acknowledges that this relationship is not linear, as there might be some biases in the detection and seizure procedures. For instance, the fact that infringing goods are detected more frequently in certain categories could imply that differences in counterfeiting factors across products merely reflect that some goods are easier to detect than others, or that some goods, for one reason or another, have been specially targeted for inspection.

Within each product category, GTRIC-e was constructed in four steps:

1) For each reporting economy, the seizure percentages for provenance economies were calculated.
2) For each provenance economy, aggregate seizure percentages were formed, taking the reporting economies' share of sensitive imports as weights.
3) From these, each economy's counterfeit source factor was established, based on the provenance economies' weight in terms of global trade.
4) Based on these factors, the GTRIC-e was formed.

Step 1: Measuring reporter-specific seizure intensities from each provenance economy

v_{epi} is economy *i*'s registered seizures of all types of infringing goods included in a given product category *p* that originate from economy *e* at a given year in terms of value.

γ_{epi} is economy *i*'s relative seizure intensity (seizure percentage) of all infringing items within the product category that originate from economy *e*, in a given year:

$$\gamma_{epi} = \frac{v_{epi}}{\sum_e v_{epi}}, \text{ such that } \sum_e \gamma_{epi} = 1 \quad \forall\, i$$

Step 2: Measuring general seizure intensities of each provenance economy

The general seizure intensity for economy *e* within the product category *p*, denoted Γ_{ep}, is then determined by averaging seizure intensities, γ_{epi}, weighted by the reporting economy's share of world imports from known counterfeit and pirate origins.[1] Hence:

$$\Gamma_{ep} = \sum_i \varpi_{pi} \gamma_{epi}$$

where the weight of reporting economy *i* is given by

$$\varpi_{pi} = \frac{m_{epi}}{\sum_i m_{epi}}$$

with m_{epi} is economy *i*'s imports of goods in a given product category *p* from economy *e* at a given year in terms of value, so that $\sum_i \varpi_{pi} = 1 \ \forall p$

Step 3: Measuring partner-specific counterfeiting factors

$m_{ep} = \sum_i m_{epi}$ is defined as the total registered world imports of all sensitive goods in the product category *p* from provenance economy *e*.

$m_p = \sum_e m_{ep}$ is defined as the total registered world imports of all sensitive goods in the product category *p* from all provenance economies.

The share of provenance economy *e* in world imports of all sensitive goods in the product category *p*, denoted s_{ep}, is then given by:

$$s_{ep} = \frac{m_{ep}}{m_p}, \text{ such that } \sum_e s_{ep} = 1, \ \forall p$$

From this, the economy-specific counterfeiting factor is established by dividing the general seizure intensity for economy *e* with the share of world imports from *e* within the product category *p*:

$$CF_{ep} = \frac{\Gamma_{ep}}{s_{ep}}$$

Step 4: Establishing GTRIC-e

Gauging the magnitude of counterfeiting and piracy from a provenance economy perspective can be done in a similar fashion as for sensitive goods. Hence, a general trade-related index of counterfeiting for economies (GTRIC-e) is established along similar lines and assumptions:

- The first assumption (A3) is that the intensity by which any counterfeit or pirated article from a particular economy is detected and seized by customs is positively correlated with the actual amount of counterfeit and pirate articles imported from that location.
- The second assumption (A4) acknowledges that assumption A3 may not be entirely correct. For instance, a high seizure intensity of counterfeit or pirated articles from a particular provenance economy could be an indication that the provenance economy is part of a customs profiling scheme, or that it is specially targeted for investigation by customs. The importance that provenance economies with low seizure intensities play regarding actual counterfeiting and piracy activity could therefore be under-represented by the index and lead to an underestimation of the scale of counterfeiting and piracy.

As with the product-specific index, GTRIC-e is established by applying a positive monotonic transformation of the counterfeiting factor index for provenance economies using natural logarithms. This follows from assumption A3 (positive correlation between seizure intensities and actual infringement activities) and assumption A4 (lower

intensities tend to underestimate actual activities). Considering the possibilities of outliers at both ends of the GTRIC-e distribution – i.e. some economies may be wrongly measured as being particularly susceptible sources of counterfeit and pirated imports, and vice versa – GTRIC-e is approximated by a left-truncated normal distribution as it does not take values below zero.

The transformed general counterfeiting factor across provenance economies on which GTRIC-e is based is therefore given by applying logarithms onto economy-specific general counterfeit factors (see, for example, Verbeek, 2000):

$$cf_{ep} = \ln(CF_{ep} + 1)$$

In addition, it is assumed that GTRIC-e follows a truncated normal distribution with $cf_{ep} \geq 0$. Following Hald (1952), the density function of the left-truncated normal distribution for cf_{ep} is given by

$$g_{LTN}(cf_{ep}) = \begin{cases} 0 & if\ cf_{ep} \leq 0 \\ \dfrac{g(cf_{ep})}{\int_0^{\infty} g(cf_{ep})\partial cf_{ep}} & if\ cf_{ep} \geq 0 \end{cases}$$

Where $g(cf_{ep})$ is the non-truncated normal distribution for cf_{ep} specified as:

$$g(cf_{ep}) = \frac{1}{\sqrt{2\pi\sigma_{cf}^2}} \exp\left(-\frac{1}{2}\left(\frac{cf_{ep} - \mu_{cf}}{\sigma_{cf}} \right)^2 \right)$$

The mean and variance of the normal distribution, here denoted μ_{cf} and σ_{cf}^2, are estimated over the transformed counterfeiting factor index, cf_{ep}, and given by $\widehat{\mu}_{cf}$ and $\widehat{\sigma}_{cf}^2$.

This enables the calculation of the counterfeit import propensity index within each product category p (GTRIC-e) across provenance economies, corresponding to the cumulative distribution function of cf_{ep}.

Construction of RCAP-e and RCAT-e

Relative comparative advantage for production of a given good (RCAP-e)

The first statistical filter that can be used to tell producers from transit points looks at the production capacities of a given economy in a given sector. The rationale behind this test is simple: production activity often relies on certain skills, or resources. It also exhibits certain returns to scale properties that results in specialisation of this particular economy in the production of that good. Hence, production of counterfeits in a sector is

more likely to occur in a known provenance economy that specialises in the legitimate production of a given good, than in a country without production capacity in a given sector.

This specialisation of a given trading economy in production of a given good is captured by an indicator of the relative comparative advantage for production (RCAP-e). The indicator looks at the share of industrial activity in a given sector with the total industrial activity in a given economy.

Construction of this indicator is based on industry statistics. Importantly, these statistics are based on a different taxonomy than the trade statistics, hence a matching exercise was performed (see Box B.1). A detailed description of the methodology used to calculate the RCAP-e is provided below.

Box B.1. Product classification methods

Although the datasets on trade and industrial activity in principle classify the same goods, they differ in the taxonomies used. Industry data (output) are extracted from the industrial statistics database of the United Nations Industrial Development Organization (UNIDO). These data are classified according to the categories of industrial activity (ISIC-Rev3) at a two-digit level. Trade data and seizure data are classified using the Harmonized Tariff Schedule (HTS) classification scheme. These differences are due to the fact that although they cover the same issues, they were created and are run independently.

In order to create the RCAP-e indicator, the HS code that refers to the GTRIC-p tables and to categories of international trade are matched with the relevant categories of industrial activity (ISIC). This is done following the concordance tables proposed by the United Nations Statistics Division (available at: http://unstats.un.org/unsd/cr/registry/regot.asp?Lg=1).

More formally, the revealed comparative advantage in production for an economy *e* in a given product category *p* (RCAP-e) measures whether this economy produces more of this given type of product as a share of its total production than the "average" country:

$$RCAP_{ep} = \frac{y_{ep} \Big/ \sum_p y_{ep}}{\sum_e y_{ep} \Big/ \sum_e \sum_p y_{ep}}$$

where y_{ep} is the output of product *p* by economy *e* in a given year.

Relative comparative advantage for being a transit point (RCAT-e).

The relative comparative advantage for being a transit point in global trade (RCAT-e) is the second filter used to determine the actual role of a provenance economy. This indicator represents the degree to which a given economy specialises in re-exporting a given product, e.g. through development of advanced logistical infrastructure, or by its convenient geographical location. Consequently, it is assumed that such factors that facilitate transiting of genuine products will also facilitate transit of fake products in the same product categories.

The RCAT-e indicator is calculated by comparing relative volumes of re-export of a given good to the shares calculated for other exporting economies. This is done based on

re-export data that come from the UN Comtrade database. A detailed description of the methodology used to calculate the RCAT-e is provided in Annex B.

Formally, the revealed comparative advantage in transit for an economy *e* within a given product category *p* (RCAP-e) measures whether this economy re-exports more goods of this given type of product as a share of its total re-exports than the "average" country:

$$RCAT_{ep} = \frac{x_{ep} \Big/ \sum_p x_{ep}}{\sum_e x_{ep} \Big/ \sum_e \sum_p x_{ep}}$$

where x_{ep} is re-exports of product *p* by economy *e* in a given year.

Application of both filters

Once the statistical filters (RCAP-e and RCAT-e indicators) are constructed, they are applied to distinguish the producing economies from the key potential transit points. Both filters are applied for every economy on the top provenance list for counterfeit goods, i.e. economies with a high GTRIC-e score. The selection of top economies is done arbitrarily, depending on the distribution of the GTRIC within a given product category.

The rationale for using the filters is as follows: if an economy is *not* a significant producer of a fake good (i.e. its RCAP-e for this good is low) and/or is a large re-exporter of this good in legitimate trade (i.e its RCAT-e for this good is high), then it is likely to be a transit point.

On the other hand, if this top listed provenance economy of counterfeit goods within the product category is a significant producer (i.e. has a high RCAP-e score) or is a small re-exporter (i.e. has a low RCAT-e score), it is likely to be a producer of the fake goods.

This exercise results in a list of producers and a list of transit points. Together with the information on the place of seizure, this will allow the development of maps of trade in fake goods in given product categories, showing key producers, main transit point and main destination points.

Annex C. Additional tables

Table C.1. Industries by Harmonized System (HS) codes

HS code	Description
01	Live animals.
02	Meat and edible meat offal.
03	Fish and crustaceans, molluscs and other aquatic invertebrates.
04	Dairy produce; birds' eggs; natural honey; edible products of animal origin.
05	Products of animal origin, not elsewhere specified or included.
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.
07	Edible vegetables and certain roots and tubers.
08	Edible fruit and nuts; peel of citrus fruit or melons.
09	Coffee, tea, mate and spices.
10	Cereals.
11	Products of the milling industry; malt; starches; inulin; wheat gluten.
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants.
13	Lac; gums, resins and other vegetable saps and extracts.
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included.
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats.
16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates.
17	Sugars and sugar confectionery.
18	Cocoa and cocoa preparations.
19	Preparations of cereals, flour, starch or milk; pastry cooks' products.
20	Preparations of vegetables, fruit, nuts or other parts of plants.
21	Miscellaneous edible preparations.
22	Beverages, spirits and vinegar.
23	Residues and waste from the food industries; prepared animal fodder.
24	Tobacco and manufactured tobacco substitutes.
25	Salt; sulphur; earths and stone; plastering materials, lime and cement.
26	Ores, slag and ash.
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes.
29	Organic chemicals.
30	Pharmaceutical products.

Table C.1. Industries by Harmonized System (HS) codes (*continued*)

HS code	Description
31	Fertilisers.
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks.
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations.
34	Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations
35	Albuminoidal substances; modified starches; glues; enzymes.
36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.
37	Photographic or cinematographic goods.
38	Miscellaneous chemical products.
39	Plastics and articles thereof.
40	Rubber and articles thereof.
41	Raw hides and skins (other than furskins) and leather.
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut.
43	Furskins and artificial fur; manufactures thereof.
44	Wood and articles of wood; wood charcoal.
45	Cork and articles of cork.
46	Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork.
47	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard.
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard.
49	Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans.
50	Silk.
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric.
52	Cotton.
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn.
54	Man-made filaments.
55	Man-made staple fibres.
56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof.
57	Carpets and other textile floor coverings.
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery.
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use.
60	Knitted or crocheted fabrics.
61	Articles of apparel and clothing accessories, knitted or crocheted.
62	Articles of apparel and clothing accessories, not knitted or crocheted.
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags.
64	Footwear, gaiters and the like; parts of such articles.

Table C.1. Industries by Harmonized System (HS) codes (*end*)

HS code	Description
65	Headgear and parts thereof.
66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof.
67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair.
68	Articles of stone, plaster, cement, asbestos, mica or similar materials.
69	Ceramic products.
70	Glass and glassware.
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation, jewellery; coin.
72	Iron and steel.
73	Articles of iron or steel.
74	Copper and articles thereof.
75	Nickel and articles thereof.
76	Aluminium and articles thereof.
77	(Reserved for possible future use in the Harmonized System)
78	Lead and articles thereof.
79	Zinc and articles thereof.
80	Tin and articles thereof.
81	Other base metals; cermet; articles thereof.
82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal.
83	Miscellaneous articles of base metal.
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles
86	Railway or tramway locomotives, rolling-stock and parts thereat railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds.
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof.
88	Aircraft, spacecraft, and parts thereof.
89	Ships, boats and floating structures.
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.
91	Clocks and watches and parts thereof.
92	Musical instruments; parts and accessories of such articles.
93	Arms and ammunition; parts and accessories thereof.
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated nameplates and the like; prefabricated buildings.
95	Toys, games and sports equipment; parts and accessories thereof.
96	Miscellaneous manufactured articles.
97	Works of art, collectors' pieces and antiques.
98	(Reserved for special uses by Contracting Parties).

Table C.2. GTRIC-e, RCAP-e and RCAT-e for foodstuff

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRICE U	GTRIC world	RCAP	RCAT
Aruba	0.00	0.00			Chile	0.00	0.08	1.58	
Albania	0.00	0.00	1.09		China (People's Republic of)	0.83	1.00	1.64	
Andorra	0.00	0.00			Côte d'Ivoire	0.00	0.00		
United Arab Emirates	0.66	0.68	0.00	0.35	Cameroon	0.00	0.00		
Argentina	0.00	0.06			Congo	0.00	0.00		
Armenia	0.00	0.00	2.38	0.88	Cook Islands		0.00		
Antigua and Barbuda	0.00	0.00		0.31	Colombia	0.00	0.00	1.74	1.58
Australia	0.00	0.07	1.04		Comoros	0.00	0.00		0.00
Austria	0.00	0.00	0.56		Cabo Verde	0.00	0.00		31.57
Azerbaijan	0.00	0.00	0.38		Costa Rica	0.00	0.00		
Burundi	0.00	0.00	1.72	0.03	Cyprus*	0.00	0.00	2.49	3.00
Belgium	0.00	0.05	0.94		Czech Republic	0.00	0.00	0.31	
Benin	0.00	0.00		5.58	Germany	0.00	0.10	0.53	
Burkina Faso	0.00	0.00		0.24	Dominica	0.00	0.00		
Bangladesh	0.00	0.00	0.51		Denmark	0.00	0.00	0.39	
Bulgaria	0.00	0.00	1.13		Dominican Republic	0.00	0.00		
Bahrain	0.00	0.20	0.00	0.52	Algeria	0.00	0.16		
Bahamas	0.00	0.00		0	Ecuador	0.00	0.00		
Bosnia and Herzegovina	0.00	0.00	1.08		Egypt	1.00	0.55	0.72	
Belarus	0.00	0.00	0.00		Spain	0.00	0.11	1.20	
Belize	0.00	0.00		20.55	Estonia	0.00	0.00	0.82	
Bermuda	0.00	0.00	1.05		Ethiopia	0.00	0.49	1.77	1.16
Bolivia	0.00	0.00			Finland	0.00	0.00	0.46	
Brazil	0.00	0.11	1.47		Fiji	0.00	0.00	5.51	13.88
Barbados	0.00	0.00		6.32	France	0.00	0.05	1.10	
Brunei Darussalam	0.00	0.00			United Kingdom	0.27	0.18	0.72	0.71
Bhutan		0.00			Georgia	0.00	0.00	2.44	0.79
Botswana	0.00	0.00	8.89		Ghana	0.00	0.00		
Central African Republic	0.00	0.00			Guinea	0.00	0.00		
Canada	0.00	0.11	0.85	1.32	Gambia	0.00	0.00		16.79
Switzerland	0.00	0.00	0.44		Greece	0.00	0.06	1.26	

Table C.2. GTRIC-e, RCAP-e and RCAT-e for foodstuff (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Greenland	0.00	0.00			Madagascar	0.00	0.00		4.11
Guatemala	0.00	0.00			Maldives	0.00	0.00		
Guyana	0.00	0.00		6.97	Mexico	0.00	0.07	1.03	
Hong Kong (China)	0.00	0.14	1.88	0.73	Former Yugoslav Republic of Macedonia	0.00	0.00	1.25	
Honduras	0.00	0.00			Mali	0.00	0.00		0.04
Croatia	0.00	0.00			Malta	0.00	0.00	0.00	
Hungary	0.00	0.00	0.57		Montenegro	0.00	0.00		0.55
Indonesia	0.00	0.26	1.91		Mongolia		0.00		
India	0.23	0.33	1.60		Mozambique	0.00	0.00		
Ireland	0.00	0.00	0.84		Mauritania	0.00	0.00		
Iran	0.00	0.38	0.76		Montserrat	0.00	0.00		0.01
Iraq	0.00	0.00	1.15		Mauritius	0.00	0.15	0.00	15.33
Iceland	0.00	0.00			Malawi	0.00	0.00		5.73
Israel	0.22	0.08	1.24		Malaysia	0.00	0.11	1.32	
Italy	0.00	0.16	0.66	1.45	Namibia	0.00	0.00		
Jamaica	0.00	0.00		4.40	New Caledonia	0.00	0.00		
Jordan	0.00	0.11	0.92	2.05	Niger	0.00	0.00		1.30
Japan	0.00	0.00	0.00		Nigeria	0.00	0.00		
Kazakhstan	0.00	0.00	0.00		Nicaragua	0.00	0.00		
Kenya	0.00	0.34	8.65		Netherlands	0.00	0.10	2.50	
Kyrgyzstan	0.00	0.00	1.03	0.58	Norway	0.00	0.00	1.55	
Cambodia	0.00	0.00			Nepal	0.00	0.00	1.25	
Kiribati		0.00			New Zealand	0.00	0.20	0.00	5.02
Saint Kitts and Nevis	0.00	0.00		0.04	Oman	0.00	0.00	0.54	0.41
Korea	0.00	0.13	0.19		Pakistan	0.00	0.28	1.48	0.98
Kuwait	0.00	0.00			Panama	0.00	0.21		
Lebanon	0.00	0.14			Peru	0.00	0.00	2.47	
Sri Lanka	0.00	0.14	0.57	1.04	Philippines	0.00	0.00	0.98	
Lithuania	0.00	0.00	1.32		Papua New Guinea	0.00	0.00		
Luxembourg	0.00	0.00	1.50	0.93	Poland	0.00	0.06	1.13	
Latvia	0.00	0.00	1.50		Portugal	0.00	0.00	0.85	
Macau (China)	0.00	0.00	0.00	1.38	Paraguay	0.00	0.00		
Morocco	0.00	0.17	1.83		Palestinian Authority*	0.00	0.00	2.85	3.46
Moldova	0.00	0.00	3.31	8.52	French Polynesia	0.00	0.00		

Table C.2. GTRIC-e, RCAP-e and RCAT-e for foodstuff (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Qatar	0.00	0.00	0.14	0	Tunisia	0.76	0.19		
Romania	0.00	0.00	0.90		Turkey	0.78	0.61	1.14	
Russia	0.25	0.19	1.30		Tanzania	0.00	0.00		
Rwanda	0.00	0.00		0.64	Uganda	0.00	0.00		7.73
Saudi Arabia	0.00	0.41		1.18	Ukraine	0.00	0.42	1.52	
Sudan	0.00	0.00		0.2	Uruguay	0.00	0.00	4.14	
Senegal	0.00	0.00	1.70		United States	0.00	0.11	0.00	0.92
Singapore	0.27	0.06	0.11		Saint Vincent and the Grenadines	0.00	0.00		0.29
Solomon Islands	0.00	0.00		4.91	Venezuela	0.00	0.00		0.00
El Salvador	0.00	0.00			Viet Nam	0.00	0.24	1.10	
Serbia	0.00	0.00	0.00		Vanuatu	0.00	0.00		
Sao Tome and Principe	0.00	0.00		42.53	Samoa	0.00	0.00		4.46
Suriname	0.00	0.00		0.06	Yemen	0.00	0.21	5.14	0.36
Slovak Republic	0.00	0.00	0.30		South Africa	0.00	0.13		
Slovenia	0.00	0.00	0.45		Zambia	0.00	0.00		
Sweden	0.00	0.00	0.54		Zimbabwe	0.00	0.00		1.46
Seychelles	0.00	0.00							
Togo	0.00	0.45		3.77					
Thailand	0.00	0.23	1.06	3.44					
Timor-Leste	0.00	0.00							
Tonga	0.00	0.00		0.93					

Table C.3. GTRIC-e, RCAP-e and RCAT-e for pharmaceuticals

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Aruba	0.00	0.00			China (People's Republic of)	0.70	0.94	1.27	
Albania	0.00	0.33	0.00		Côte d'Ivoire	0.00	0.00		
Andorra	0.00	0.00			Cameroon	0.09	0.28		
United Arab Emirates	0.04	0.23	0.00	0.02	Congo	0.00	0.00		
Argentina	0.03	0.02			Colombia	0.00	0.03	1.61	0.34
Armenia	0.00	0.00	0.64	0.16	Comoros	0.00	0.00		0.00
Antigua and Barbuda	0.00	0.00		0	Cabo Verde	0.00	0.00		0.30
Australia	0.04	0.05	0.00		Costa Rica	0.00	0.04		
Austria	0.00	0.00	1.68		Cyprus*	0.00	0.00	4.15	15.28
Azerbaijan	0.00	0.00	0.00		Czech Republic	0.00	0.00	1.06	
Burundi	0.00	0.00	0.00	0.04	Germany	0.04	0.09	1.56	
Belgium	0.00	0.00	2.41		Dominica	0.00	0.00		
Benin	0.00	0.00		0.27	Denmark	0.00	0.00	12.18	
Burkina Faso	0.00	0.00		0.02	Dominican Republic	0.02	0.21		
Bangladesh	0.00	0.00	1.46		Algeria	0.00	0.00		
Bulgaria	0.00	0.02	0.00		Ecuador	0.00	0.00		
Bahrain	0.00	0.00	0.00	0	Egypt	0.00	0.13	2.02	
Bahamas	0.00	0.00		0	Spain	0.00	0.01	1.99	
Bosnia and Herzegovina	0.00	0.00	0.00		Estonia	0.00	0.00	0.39	
Belarus	0.00	0.00	0.00		Ethiopia	0.00	0.00	1.03	0.10
Bermuda	0.00	0.00	0.00		Finland	0.02	0.02	0.84	
Bolivia	0.00	0.00			Fiji	0.00	0.00	0.00	0.74
Brazil	0.00	0.01	1.97		France	0.00	0.03	2.58	
Barbados	0.00	0.00		6.33	United Kingdom	0.02	0.07	2.73	2.82
Brunei Darussalam	0.00	0.00			Georgia	0.00	0.00	1.32	1.23
Bhutan	0.00	0.00			Ghana	0.00	0.00		
Botswana	0.00	0.00	0.00		Guinea	0.00	0.00		
Central African Republic	0.00	0.00			Greece	0.00	0.00	1.51	
Canada	0.00	0.04	0.35	0.5	Greenland	0.00	0.00		
Switzerland	0.23	0.22	29.73		Guatemala	0.00	0.05		
Chile	0.00	0.04	2.59		Guyana	0.00	0.00		0.11

Table C.3. GTRIC-e, RCAP-e and RCAT-e for pharmaceuticals (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Hong Kong (China)	1.00	0.79	0.00	1.06	Montenegro	0.00	0.00		0.68
Honduras	0.00	0.00			Mongolia	0.00	0.00		
Croatia	0.00	0.00			Mozambique	0.00	0.00		
Hungary	0.00	0.00	2.51		Mauritius	0.07	0.06	0.00	0.07
Indonesia	0.00	0.11	0.99		Malawi	0.00	0.00		0.01
India	0.7'	1.00	2.27		Malaysia	0.00	0.00	0.16	
Ireland	0.00	0.00	35.51		Namibia	0.00	0.13		
Iran	0.23	0.50	0.71		New Caledonia	0.00	0.00		
Iceland	0.00	0.00			Niger	0.00	0.00		0.00
Israel	0.01	0.02	6.66		Nigeria	0.00	0.00		
Italy	0.00	0.02	1.76	1.68	Nicaragua	0.00	0.00		
Jamaica	0.00	0.00		0.03	Netherlands	0.00	0.02	3.90	
Jordan	0.00	0.07	3.78	4	Norway	0.00	0.00	0.43	
Japan	0.02	0.03	43.21		Nepal	0.00	0.00	1.30	
Kazakhstan	0.00	0.00	21.37		New Zealand	0.03	0.21	25.11	0.50
Kenya	0.00	0.00	0.00		Oman	0.00	0.00	0.31	0.04
Kyrgyzstan	0.00	0.00	0.07	0.04	Pakistan	0.00	0.06		0.33
Cambodia	0.00	0.00			Panama	0.00	0.00		
Saint Kitts and Nevis	0.00	0.00		0	Peru	0.00	0.00	0.69	
Korea	0.04	0.06	0.60		Philippines	0.26	0.13	1.18	
Kuwait	0.00	0.00			Papua New Guinea	0.00	0.00		
Lebanon	0.10	0.23			Poland	0.00	0.00	0.91	
Sri Lanka	0.00	0.00	0.00	0.01	Portugal	0.00	0.00	0.98	
Lithuania	0.02	0.03	0.55		Paraguay	0.00	0.00		
Luxembourg	0.00	0.00	0.00	0.24	Palestinian Authority*	0.00	0.00	2.09	0.61
Latvia	0.03	0.10	0.00		French Polynesia	0.00	0.00		
Macau (China)	0.00	0.00	0.00	0.42	Qatar	0.00	0.17	0.00	0.00
Morocco	0.00	0.00	1.37		Romania	0.00	0.02	0.75	
Moldova	0.06	0.10	0.93	0.66	Russia	0.02	0.02	0.88	
Madagascar	0.00	0.00		0	Rwanda	0.00	0.00		0.13
Mexico	0.00	0.03	1.47		Saudi Arabia	0.00	0.14		0.04
Former Yugoslav Republic of Macedonia	0.00	0.00	1.65		Sudan	0.00	0.00		0.00
Mali	0.00	0.00		0.01	Senegal	0.00	0.00	1.37	
Malta	0.00	0.00	0.00		Singapore	0.44	0.39	4.77	

Table C.3. GTRIC-e, RCAP-e and RCAT-e for pharmaceuticals (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
El Salvador	0.00	0.05			Samoa	0.00	0.00		0.00
Serbia	0.00	0.00	24.10		Yemen	0.00	0.50	0.35	0.02
Suriname	0.00	0.00		0	South Africa	0.00	0.00		
Slovak Republic	0.00	0.00	0.38		Zambia	0.00	0.00		
Slovenia	0.00	0.00	5.57		Zimbabwe	0.00	0.00		0.03
Sweden	0.00	0.01	2.84						
Seychelles	0.00	0.00							
Togo		0.19		0.21					
Thailand	0.11	0.14	0.35	0.08					
Tonga	0.00	0.00		0.06					
Tunisia	0.00	0.00							
Turkey	0.10	0.20	0.87						
Tanzania	0.00	0.00							
Uganda	0.00	0.00		0.31					
Ukraine	0.00	0.00	0.83						
Uruguay	0.00	0.00	1.85						
United States	0.06	0.07	0.00	1.27					
Saint Vincent and the Grenadines	0.00	0.00		0					
Venezuela	0.00	0.00		0.01					
Viet Nam	0.02	0.12	1.84						
Vanuatu	0.00	0.00							

Table C.4. GTRIC-e, RCAP-e and RCAT-e for perfumery and cosmetics

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Aruba	0.00	0.00			China (People's Republic of)	1.00	1.00	1.02	
Albania	0.11	0.22	0.00		Côte d'Ivoire	0.00	0.00		
Andorra	0.00	0.00			Cameroon	0.00	0.00		
United Arab Emirates	0.26	0.37	0.00	1.22	Congo	0.00	0.00		
Argentina	0.00	0.00			Colombia	0.00	0.02	3.71	1.55
Armenia	0.00	0.01	0.00	0.02	Comoros	0.00	0.00		93.21
Antigua and Barbuda	0.00	0.00		0	Cabo Verde	0.00	0.00		0.00
Australia	0.01	0.01	0.00		Costa Rica	0.00	0.00		
Austria	0.00	0.00	0.64		Cyprus*	0.00	0.00	0.94	1.09
Azerbaijan	0.00	0.00	0.01		Czech Republic	0.00	0.00	0.19	
Burundi	0.00	0.00	0.00	0.03	Germany	0.00	0.02	0.78	
Belgium	0.00	0.02	0.94		Dominica	0.00	0.00		
Benin	0.00	0.00		0.06	Denmark	0.00	0.00	0.69	
Burkina Faso	0.00	0.00		0.04	Dominican Republic	0.04	0.06		
Bangladesh	0.00	0.00	0.54		Algeria	0.00	0.00		
Bulgaria	0.04	0.05	1.38		Ecuador	0.00	0.00		
Bahrain	0.00	0.00	0.00	0.32	Egypt	0.00	0.03	2.12	
Bahamas	0.00	0.00		0.32	Spain	0.03	0.03	1.66	
Bosnia and Herzegovina	0.00	0.00	0.26		Estonia	0.00	0.00	0.22	
Belarus	0.07	0.10	0.00		Ethiopia	0.00	0.00	4.91	1.24
Belize	0.00	0.00		2.02	Finland	0.00	0.00	0.20	
Bermuda	0.00	0.00	1.64		Fiji	0.00	0.00	0.00	0.89
Bolivia	0.00	0.00			France	0.01	0.04	2.08	
Brazil	0.01	0.03	0.00		United Kingdom	0.00	0.02	1.51	1.91
Barbados	0.00	0.00		0.67	Georgia	0.00	0.00	0.18	0.14
Brunei Darussalam	0.00	0.00			Ghana	0.00	0.00		
Bhutan	0.00	0.00			Guinea	0.00	0.00		
Botswana	0.00	0.00	0.00		Gambia	0.00	0.00		0.01
Canada	0.00	0.02	0.30	0.61	Greece	0.06	0.07	1.28	
Switzerland	0.03	0.03	0.00		Greenland	0.00	0.00		
Chile	0.02	0.02	0.00		Guatemala	0.00	0.00		

Table C.4. GTRIC-e, RCAP-e and RCAT-e for perfumery and cosmetics (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guyana	0.00	0.00		0.07	Montenegro	0.00	0.00		0.24
Hong Kong (China)	0.63	0.60	0.00	0.86	Mongolia	0.00	0.00		
Honduras	0.00	0.00			Mozambique	0.00	0.00		
Croatia	0.00	0.00			Mauritius	0.06	0.04	0.00	0.05
Hungary	0.00	0.00	0.56		Malawi	0.00	0.00		0.05
Indonesia	0.01	0.04	1.56		Malaysia	0.17	0.12	1.34	
India	0.02	0.09	1.18		Namibia	0.00	0.00		
Ireland	0.00	0.00	0.00		New Caledonia	0.00	0.00		
Iran	0.00	0.00	0.90		Niger	0.00	0.00		0.00
Iceland	0.00	0.00			Nigeria	0.00	0.00		
Israel	0.02	0.02	0.00		Nicaragua	0.00	0.00		
Italy	0.00	0.02	1.09	1.38	Netherlands	0.01	0.01	0.00	
Jordan	0.04	0.04	1.90	0.52	Norway	0.00	0.00	0.61	
Japan	0.00	0.01	0.00		Nepal	0.00	0.00	3.43	
Kazakhstan	0.00	0.00	0.00		New Zealand	0.00	0.00	0.00	0.51
Kenya	0.00	0.00	0.00		Oman	0.00	0.00	0.38	0.04
Kyrgyzstan	0.00	0.00	0.11	0.01	Pakistan	0.04	0.06		0.11
Cambodia	0.00	0.00			Panama	0.00	0.11		
Saint Kitts and Nevis	0.00	0.00		0	Peru	0.00	0.00	1.99	
Korea	0.01	0.02	0.63		Philippines	0.00	0.00	0.00	
Kuwait	0.25	0.12	0.14	1.08	Papua New Guinea	0.00	0.00		
Lebanon	0.05	0.08			Poland	0.01	0.02	1.61	
Sri Lanka	0.00	0.00	0.00	0.57	Portugal	0.00	0.00	0.43	
Lithuania	0.02	0.03	0.20		Paraguay	0.00	0.00		
Luxembourg	0.00	0.00	0.00	1.24	Palestinian Authority*	0.00	0.00	0.00	0.18
Latvia	0.00	0.00	0.26		French Polynesia	0.00	0.00		
Macau (China)	0.00	0.00	0.00	0.01	Qatar	0.00	0.00	0.00	0.00
Morocco	0.12	0.07	1.24		Romania	0.03	0.04	0.29	
Moldova	0.00	0.00	0.19	0.61	Russia	0.06	0.07	1.02	
Madagascar	0.00	0.00		4.23	Rwanda	0.00	0.00		1.07
Mexico	0.00	0.03	1.52		Saudi Arabia	0.00	0.00		0.12
Former Yugoslav Republic of Macedonia	0.00	0.00	0.16		Sudan	0.00	0.00		0.01
Mali	0.00	0.00		0.02	Senegal	0.00	0.00	3.78	
Malta	0.00	0.00	0.00		Singapore	0.16	0.14	0.71	

Table C.4. GTRIC-e, RCAP-e and RCAT-e for perfumery and cosmetics (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
El Salvador	0.00	0.00			Vanuatu	0.00	0.00		
Serbia	0.00	0.02	0.00		Samoa	0.00	0.00		0.49
Sao Tome and Principe	0.00	0.00		0	Yemen	0.00	0.00	0.67	0.01
Suriname	0.00	0.00		0	South Africa	0.00	0.06		
Slovak Republic	0.00	0.00	0.12		Zambia	0.00	0.00		
Slovenia	0.00	0.00	1.45		Zimbabwe	0.00	0.00		0.04
Sweden	0.00	0.00	0.43						
Seychelles	0.00	0.00							
Togo	0.00	0.00		9.21					
Thailand	0.11	0.11	1.03	0.96					
Tonga	0.00	0.00		0.11					
Tunisia	0.00	0.00							
Turkey	0.41	0.37	1.26						
Tanzania	0.00	0.00							
Uganda	0.00	0.00		1.68					
Ukraine	0.14	0.26	0.69						
Uruguay	0.00	0.00	0.00						
United States	0.07	0.06	0.00	1.26					
Saint Vincent and the Grenadines	0.00	0.00		0.01					
Venezuela	0.00	0.00		0.01					
Viet Nam	0.06	0.06	0.00						

Table C.5. GTRIC-e, RCAP-e and RCAT-e for leather articles and handbags

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Aruba	0.01	0.00			Switzerland	0.07	0.06	0.00	
Angola	0.00	0.00			Chile	0.13	0.07	0.00	
Albania	0.43	0.70	0.01		China (People's Republic of)	1.00	1.00	2.60	
Andorra	0.00	0.00			Côte d'Ivoire	0.00	0.00		
United Arab Emirates	0.58	0.43	0.00	0.00	Cameroon	0.00	0.00		
Argentina	0.04	0.04			Congo	0.00	0.00		
Armenia	0.00	0.21	2.12	0.24	Cook Islands	0.00	0.00		
Antigua and Barbuda	0.00	0.00		0.00	Colombia	0.04	0.09	2.03	0.62
Australia	0.05	0.06	0.00		Comoros	0.00	0.00		0.00
Austria	0.00	0.01	0.35		Cabo Verde	0.00	0.00		0.00
Azerbaijan	0.00	0.31	0.02		Costa Rica	0.10	0.08		
Burundi	0.00	0.00	0.00	0.12	Cyprus*	0.00	0.03	0.00	0.04
Belgium	0.03	0.03	0.00		Czech Republic	0.00	0.00	0.00	
Benin	0.00	0.00		0.02	Germany	0.05	0.03	0.36	
Burkina Faso	0.00	0.00		0.00	Dominica	0.00	0.00		
Bangladesh	0.08	0.09	0.82		Denmark	0.00	0.00	0.28	
Bulgaria	0.06	0.12	1.47		Dominican Republic	0.00	0.09		
Bahrain	0.00	0.00	0.00	0.00	Algeria	0.00	0.00		
Bahamas	0.00	0.00		0.00	Ecuador	0.00	0.02		
Bosnia and Herzegovina	0.06	0.11	0.62		Egypt	0.46	0.42	0.06	
Belarus	0.00	0.00	0.00		Spain	0.04	0.06	1.70	
Belize	0.00	0.00		0.01	Estonia	0.00	0.00	0.82	
Bermuda	0.00	0.00	0.00		Ethiopia	0.00	0.00	0.00	2.60
Bolivia	0.00	0.00			Finland	0.00	0.00	0.00	
Brazil	0.04	0.06	0.00		Fiji	0.00	0.00	0.00	0.15
Barbados	0.00	0.00		0.36	France	0.00	0.03	5.10	
Brunei Darussalam	0.00	0.00			United Kingdom	0.03	0.07	0.85	0.77
Bhutan	0.00	0.00			Georgia	0.00	0.11	0.09	0.04
Botswana	0.00	0.00	0.00		Ghana	0.07	0.10		
Central African Republic	0.00	0.00			Guinea	0.00	0.00		
Canada	0.04	0.05	0.00	0.11	Gambia	0.00	0.00		0.01

Table C.5. GTRIC-e, RCAP-e and RCAT-e for leather articles and handbags (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Greece	0.11	0.17	0.41		Morocco	0.37	0.36	0.52	
Greenland	0.00	0.00			Moldova	0.00	0.00	4.37	7.77
Guatemala	0.00	0.04			Madagascar	0.00	0.00		7.01
Guyana	0.00	0.00		0.01	Maldives	0.00	0.00		
Hong Kong (China)	0.71	0.69	0.00	1.07	Mexico	0.01	0.05	0.22	
Honduras	0.00	0.00			Former Yugoslav Republic of Macedonia	0.04	0.06	0.12	
Croatia	0.02	0.03			Mali	0.00	0.00		0.00
Hungary	0.00	0.00	5.00		Malta	0.00	0.00	0.00	
Indonesia	0.12	0.14	2.01		Montenegro	0.00	0.00		0.08
India	0.10	0.12	1.29		Mongolia	0.00	0.00		
Ireland	0.00	0.00	0.00		Mozambique	0.00	0.00		
Iran	0.36	0.17	0.03		Mauritania	0.00	0.00		
Iraq	0.00	0.00	0.00		Montserrat	0.00	0.00		0.00
Iceland	0.00	0.00			Mauritius	0.00	0.00	0.00	4.95
Israel	0.02	0.04	0.00		Malawi	0.00	0.00		0.01
Italy	0.02	0.05	10.37	6.67	Malaysia	0.31	0.23	1.42	
Jamaica	0.00	0.00		0.01	Namibia	0.00	0.00		
Jordan	0.00	0.16	0.42	0.04	New Caledonia	0.00	0.00		
Japan	0.10	0.20	0.00		Nigeria	0.17	0.22		
Kazakhstan	0.09	0.10	0.00		Nicaragua	0.00	0.00		
Kenya	0.00	0.00	0.00		Netherlands	0.04	0.05	0.00	
Kyrgyzstan	0.00	0.16	0.01	0.06	Norway	0.01	0.01	0.06	
Cambodia	0.11	0.33	1.23		Nepal	0.04	0.25	0.00	
Kiribati	0.00	0.00			New Zealand	0.00	0.00	0.00	0.10
Saint Kitts and Nevis	0.00	0.00		0.00	Oman	0.00	0.00	0.00	0.00
Korea	0.06	0.10	1.23		Pakistan	0.09	0.11		13.49
Kuwait	0.09	0.35	0.01		Panama	0.00	0.13		
Lebanon	0.22	0.18			Peru	0.09	0.11	0.44	
Sri Lanka	0.02	0.04	0.00	1.05	Philippines	0.51	0.38	1.20	
Lesotho	0.00	0.00			Palau	0.00	0.00		2.95
Lithuania	0.00	0.00	0.37		Papua New Guinea	0.00	0.00		
Luxembourg	0.02	0.02	0.00	0.23	Poland	0.00	0.00	1.45	
Latvia	0.02	0.03	0.00		Portugal	0.01	0.02	0.94	
Macau (China)	0.46	0.70	0.00	1.06	Paraguay	0.00	0.00		

Table C.5. GTRIC-e, RCAP-e and RCAT-e for leather articles and handbags (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Palestinian Authority*	0.00	0.00	0.00	0.35	Timor-Leste	0.00	0.00		
French Polynesia	0.00	0.00			Tonga	0.00	0.00		0.50
Qatar	0.08	0.09	0.01	0.00	Tunisia	0.31	0.38		
Romania	0.00	0.00	2.22		Turkey	0.59	0.58	1.34	
Russia	0.16	0.14	0.00		Tanzania	0.00	0.00		
Rwanda	0.00	0.00		0.05	Uganda	0.00	0.00		0.08
Saudi Arabia	0.00	0.00		0.00	Ukraine	0.10	0.20	0.37	
Sudan	0.00	0.00		0.00	Uruguay	0.00	0.00	0.00	
Senegal	0.00	0.00	0.00		United States		0.14	0.00	0.27
Singapore	0.51	0.40	0.03		Saint Vincent and the Grenadines	0.00	0.00		0.00
Solomon Islands	0.00	0.00		0.00	Venezuela	0.00	0.00		0.00
El Salvador	0.00	0.00			Viet Nam	0.18	0.23	0.00	
Serbia	0.01	0.02	0.00		Vanuatu	0.00	0.00		
Sao Tome and Principe	0.00	0.00		2.06	Samoa	0.00	0.00		0.13
Slovak Republic	0.00	0.02	0.79		Yemen	0.00	0.00	0.15	0.00
Slovenia	0.00	0.00	8.23		South Africa	0.00	0.00		
Sweden	0.00	0.00	0.00		Zambia	0.00	0.00		
Seychelles	0.00	0.00			Zimbabwe	0.00	0.00		0.06
Turks and Caicos Islands	0.00	0.00							
Togo	0.00	0.00		0.01					
Thailand	0.42	0.36	2.69	0.80					

Table C.6. GTRIC-e, RCAP-e and RCAT-e for clothing and textile fabrics

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.03	0.06	0.02		Cameroon	0.00	0.00		
Algeria	0.00	0.00			Canada	0.05	0.05	0.24	0.16
Andorra	0.00	0.00			Central African Republic	0.00	0.00		
Angola	0.00	0.00			Chile	0.13	0.04	0.43	
Antigua and Barbuda	0.00	0.00		0.00	China (People's Republic of)	1.00	1.00	2.90	
Argentina	0.13	0.06			Colombia	0.10	0.11	3.56	1.23
Armenia	0.08	0.11	1.58	0.35	Comoros	0.00	0.00		0.66
Aruba	0.00	0.00			Congo	0.00	0.00		
Australia	0.05	0.04	0.00		Cook Islands	0.00	0.00		
Austria	0.00	0.00	0.49		Costa Rica	0.08	0.07		
Azerbaijan	0.00	0.33	0.01		Croatia	0.04	0.04		
Bahamas	0.00	0.00		0.00	Cyprus*	0.00	0.00	0.11	0.32
Bahrain	0.00	0.00	0.00	0.03	Czech Republic	0.00	0.00	0.29	
Bangladesh	0.25	0.16	46.08		Côte d'Ivoire	0.00	0.00		
Barbados	0.00	0.00		0.03	Denmark	0.00	0.00	0.10	
Belarus	0.00	0.00	0.00		Dominica	0.00	0.00		
Belgium	0.01	0.02	0.13		Dominican Republic	0.04	0.12		
Belize	0.00	0.00		0.00	Ecuador	0.13	0.17		
Benin	0.00	0.00		0.03	Egypt	0.25	0.15	0.30	
Bermuda	0.00	0.00	0.00		El Salvador	0.00	0.05		
Bhutan	0.00	0.00			Estonia	0.00	0.02	0.42	
Bolivia	0.03	0.12			Ethiopia	0.00	0.00	1.85	7.13
Bosnia and Herzegovina	0.10	0.21	0.73		Fiji	0.00	0.00	0.00	5.19
Botswana	0.00	0.00	0.00		Finland	0.03	0.02	0.08	
Brazil	0.00	0.02	0.59		Former Yugoslav Republic of Macedonia	0.05	0.06	0.71	
Brunei Darussalam	0.00	0.00			France	0.01	0.02	0.64	
Bulgaria	0.05	0.10	2.93		French Polynesia	0.00	0.00		
Burkina Faso	0.00	0.00		0.00	Gambia	0.00	0.00		0.01
Burundi	0.00	0.00	0.00	0.00	Georgia	0.00	0.00	0.00	2.34
Cabo Verde	0.21	0.22		12.32	Germany	0.07	0.04	0.15	
Cambodia	0.03	0.04	1.31		Ghana	0.28	0.14		

Table C.6. GTRIC-e, RCAP-e and RCAT-e for clothing and textile fabrics (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Greece	0.10	0.09	0.72		Maldives	0.00	0.00		
Greenland	0.00	0.00			Mali	0.00	0.00		0.00
Guatemala	0.00	0.06			Malta	0.02	0.02	0.00	
Guinea	0.00	0.00			Mauritania	0.00	0.00		
Guyana	0.00	0.00		0.15	Mauritius	0.06	0.04	0.00	49.67
Honduras	0.00	0.28			Mexico	0.04	0.07	0.46	
Hong Kong (China)	0.79	0.63	0.00	1.09	Moldova	0.03	0.05	0.51	5.96
Hungary	0.00	0.00	0.10		Mongolia	0.00	0.00		
Iceland	0.00	0.00			Montenegro	0.00	0.00		0.07
India	0.34	0.25	2.62		Montserrat	0.00	0.00		0.00
Indonesia	0.18	0.16	2.02		Morocco	0.39	0.23	1.07	
Iran	0.00	0.00	0.07		Mozambique	0.00	0.00		
Iraq	0.00	0.00	0.01		Namibia	0.00	0.00		
Ireland	0.00	0.00	0.08		Nepal	0.00	0.10	0.75	
Israel	0.03	0.03	0.00		Netherlands	0.07	0.05	0.09	
Italy	0.01	0.03	2.35	3.49	New Caledonia	0.00	0.17		
Jamaica		0.17		0.12	New Zealand	0.02	0.02	0.00	0.33
Japan	0.02	0.03	0.00		Nicaragua	0.28	0.13		
Jordan	0.04	0.02	0.27	30.27	Niger	0.00	0.00		0.02
Kazakhstan	0.00	0.06	0.00		Nigeria	0.00	0.00		
Kenya	0.00	0.00	0.00		Norway	0.00	0.00	0.00	
Kiribati	0.00	0.00			Oman	0.28	0.11	0.00	0.00
Korea	0.08	0.09	0.91		Pakistan	0.28	0.22	1.23	0.59
Kuwait	0.00	0.11			Palau	0.00	0.00		0.58
Kyrgyzstan	0.00	0.26	1.63	4.04	Palestinian Authority*	0.00	0.00	0.00	0.52
Latvia	0.06	0.05	2.64		Panama	0.27	0.33		
Lebanon	0.19	0.16			Papua New Guinea	0.00	0.00		
Lesotho	0.00	0.00			Paraguay	0.00	0.00		
Lithuania	0.00	0.00	1.72		Peru	0.24	0.24	3.70	
Luxembourg	0.00	0.00	0.00	0.23	Philippines	0.22	0.16	0.40	
Macau (China)	0.25	0.21	0.00	29.86	Poland	0.00	0.00	0.77	
Madagascar	0.00	0.00	疗	28.55	Portugal	0.00	0.00	3.65	
Malawi	0.00	0.00		0.13	Qatar	0.25	0.12	0.00	0.00
Malaysia	0.27	0.18	1.39		Romania	0.05	0.04	1.13	

Table C.6. GTRIC-e, RCAP-e and RCAT-e for clothing and textile fabrics (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Russia	0.29	0.18	0.0		Thailand	0.62	0.39	1.62	0.83
Rwanda	0.00	0.00		0.02	Timor-Leste	0.00	0.00		
Saint Kitts and Nevis	0.00	0.00		0.07	Togo	0.27	0.16		0.48
Saint Vincent and the Grenadines	0.00	0.00		0.02	Tonga	0.00	0.00		0.86
Samoa	0.00	0.00		0.03	Tunisia	0.17	0.15	1.24	
Sao Tome and Principe	0.00	0.00		0.39	Turkey	0.87	0.70	6.27	
Saudi Arabia	0.00	0.00		0.00	Turks and Caicos Islands	0.00	0.00		
Senegal	0.54	0.12	0.00		Uganda	0.00	0.00		0.03
Serbia	0.00	0.00	0.00		Ukraine	0.21	0.35	0.28	
Seychelles	0.00	0.00			United Arab Emirates	0.53	0.34	0.00	1.04
Singapore	0.83	0.46	0.01		United Kingdom	0.07	0.07	0.28	1.10
Slovak Republic	0.04	0.04	1.04		United States	0.29	0.17	0.00	0.36
Slovenia	0.03	0.02	1.12		Uruguay	0.00	0.08	0.00	
Solomon Islands	0.00	0.00		0.00	Vanuatu	0.00	0.00		
South Africa	0.03	0.04			Venezuela	0.00	0.00		0.00
Spain	0.03	0.03	0.88		Viet Nam	0.31	0.26	1.06	
Sri Lanka	0.09	0.07	14.30	50.25	Yemen	0.00	0.00	0.10	0.01
Sudan	0.00	0.00		0.00	Zambia	0.00	0.00		
Sweden	0.02	0.01	0.30		Zimbabwe	0.00	0.00		0.02
Switzerland	0.14	0.10	0.00						
Tanzania	0.00	0.00							

Table C.7. GTRIC-e, RCAP-e and RCAT-e for footwear

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.03	0.05	0.02		Canada	0.05	0.05	0.06	0.06
Algeria	0.00	0.00			Chile	0.13	0.07	1.54	
Andorra	0.00	0.00			China (People's Republic of)	0.99	1.00	1.07	
Antigua and Barbuda	0.00	0.00		0.00	Colombia	0.03	0.07	0.36	0.31
Argentina	0.00	0.02			Comoros	0.00	0.00		0.01
Armenia	0.28	0.44	0.14	1.04	Congo	0.00	0.00		
Aruba	0.00	0.00			Costa Rica	0.00	0.00		
Australia	0.14	0.16	0.00		Croatia	0.01	0.02		
Austria	0.00	0.00	0.38		Cyprus*	0.00	0.00	0.08	0.11
Azerbaijan	0.00	0.55	0.03		Czech Republic	0.00	0.00	0.11	
Bahamas	0.00	0.00		0.00	Côte d'Ivoire	0.00	0.00		
Bahrain	0.00	0.00	0.00	0.00	Denmark	0.00	0.00	0.03	
Bangladesh	0.00	0.00	0.94		Dominica	0.00	0.00		
Barbados	0.00	0.00		0.03	Dominican Republic	0.00	0.03		
Belarus	0.00	0.00	0.00		Ecuador	0.00	0.00		
Belgium	0.02	0.01	0.00		Egypt	0.11	0.09	0.04	
Belize	0.00	0.00		0.00	El Salvador	0.00	0.00		
Benin	0.00	0.00		0.04	Estonia	0.00	0.00	0.46	
Bermuda	0.00	0.00	0.00		Ethiopia	0.00	0.00	2.50	9.54
Bhutan	0.00	0.00			Fiji	0.00	0.00	0.00	0.46
Bolivia	0.00	0.11			Finland	0.00	0.01	0.29	
Bosnia and Herzegovina	0.03	0.04	0.54		Former Yugoslav Republic of Macedonia	0.00	0.05	0.95	
Botswana	0.00	0.00	0.00		France	0.01	0.01	0.11	
Brazil	0.03	0.04	2.70		French Polynesia	0.00	0.00		
Brunei Darussalam	0.00	0.00			Gambia	0.00	0.00		0.01
Bulgaria	0.06	0.07	0.88		Georgia	0.00	0.00	0.22	0.05
Burkina Faso	0.00	0.00		0.03	Germany	0.00	0.01	0.12	
Burundi	0.00	0.00	0.00	0.00	Ghana	0.12	0.04		
Cabo Verde	0.10	0.16		37.48	Greece	0.09	0.10	0.24	
Cambodia	0.00	0.00			Greenland	0.00	0.00		
Cameroon	0.00	0.00			Guatemala	0.00	0.00		

Table C.7. GTRIC-e, RCAP-e and RCAT-e for footwear (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guinea	0.00	0.00			Morocco	0.35	0.20	0.98	0.99
Guyana	0.00	0.00		0.02	Mozambique	0.00	0.00		
Honduras	0.00	0.00			Namibia	0.00	0.00		
Hong Kong (China)	0.84	0.68	0.00	1.01	Nepal	0.00	0.00	0.71	
Hungary	0.00	0.00	0.33		Netherlands	0.06	0.05	0.00	
Iceland	0.00	0.00			New Caledonia	0.00	0.00		
India	0.05	0.07	1.11		New Zealand	0.02	0.02	0.00	0.15
Indonesia	0.08	0.05	2.48		Nicaragua	0.00	0.00		
Iran	0.75	0.21	0.10		Niger	0.00	0.00		0.29
Ireland	0.00	0.00	0.00		Nigeria	0.00	0.00		
Israel	0.06	0.08	0.24		Norway	0.00	0.00	0.03	
Italy	0.03	0.05	1.95	7.27	Oman	0.00	0.00	0.02	0.01
Japan	0.10	0.10	0.00		Pakistan	0.07	0.08		1.59
Jordan	0.00	0.00	0.27	0.07	Palestinian Authority*	0.00	0.00	0.00	20.12
Kazakhstan	0.10	0.10	0.00		Panama	0.00	0.21	0.13	
Kenya	0.00	0.00	0.00		Papua New Guinea	0.00	0.00		
Korea	0.14	0.11	0.19		Paraguay	0.00	0.00		
Kuwait	0.00	0.08			Peru	0.04	0.06	0.21	
Kyrgyzstan	0.00	0.00	0.13	0.71	Philippines	0.79	0.50	1.24	
Latvia	0.02	0.03	0.09		Poland	0.00	0.00	0.33	
Lebanon	0.07	0.04			Portugal	0.01	0.01	3.91	
Lithuania	0.02	0.02	0.15		Qatar	0.00	0.12	0.03	0.00
Luxembourg	0.00	0.00	0.00	0.98	Romania	0.00	0.00	1.92	
Macau (China)	0.00	0.00	0.00	0.00	Russia	0.08	0.08	0.00	
Madagascar	0.00	0.00		0.03	Rwanda	0.00	0.00		1.28
Malawi	0.00	0.00		0.09	Saint Kitts and Nevis	0.00	0.00		0.01
Malaysia	0.43	0.19	1.10		Saint Vincent and the Grenadines	0.00	0.00		0.00
Mali	0.00	0.00		0.04	Samoa	0.00	0.00		1.34
Malta	0.02	0.03	0.00		Sao Tome and Principe	0.00	0.00		0.00
Mauritius	0.00	0.00	0.00	0.03	Saudi Arabia	0.00	0.00		0.00
Mexico	0.00	0.04	0.43		Senegal	0.59	0.22	0.11	
Moldova	0.00	0.00	0.45	3.56	Serbia	0.00	0.00	0.00	
Mongolia	0.00	0.00			Singapore	0.76	0.50	0.01	
Montenegro	0.00	0.00		0.34	Slovak Republic	0.01	0.01	1.39	

Table C.7. GTRIC-e, RCAP-e and RCAT-e for footwear (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Slovenia	0.00	0.00	0.65		Yemen	0.00	0.00	0.50	0.06
South Africa	0.04	0.02			Zambia	0.00	0.00		
Spain	0.03	0.01	0.87		Zimbabwe	0.00	0.00		0.18
Sri Lanka	0.00	0.02	1.30	0.53					
Sweden	0.01	0.01	0.04						
Switzerland	0.08	0.06	0.00						
Tanzania	0.00	0.00							
Thailand	0.24	0.19	1.71	0.12					
Togo	0.00	0.00		0.24					
Tonga	0.00	0.00		0.36					
Tunisia	0.13	0.11							
Turkey	0.86	0.68	1.02						
Uganda	0.00	0.00		0.87					
Ukraine	0.13	0.18	0.23						
United Arab Emirates	0.34	0.26	0.00	1.01					
United Kingdom	0.05	0.05	0.13	1.03					
United States	0.26	0.19	0.00	0.20					
Uruguay	0.00	0.14	0.00						
Vanuatu	0.00	0.00							
Venezuela	0.00	0.00		0.00					
Viet Nam	0.16	0.17	1.02						
Yemen	0.00	0.00	0.50	0.06					
Zambia	0.00	0.00							
Zimbabwe	0.00	0.00		0.18					

Table C.8. GTRIC-e, RCAP-e and RCAT-e for jewellery

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.00	0.00	0.00		Canada	0.01	0.03	2.57	1.11
Algeria	0.00	0.00			Central African Republic	0.00	0.00		
Andorra	0.00	0.00			Chile	0.05	0.04	1.38	
Angola	0.00	0.00			China (People's Republic of)	1.00	0.86	2.53	
Antigua and Barbuda	0.00	0.00		0.00	Colombia	0.00	1.00	1.24	1.12
Argentina	0.00	0.00			Congo	0.00	0.03		
Armenia	0.03	0.08	2.04	2.04	Cook Islands	0.00	0.00		
Aruba	0.00	0.00			Costa Rica	0.00	0.00		
Australia	0.02	0.02	0.00		Croatia	0.00	0.03		
Austria	0.00	0.00	1.72		Cyprus*	0.00	0.00	0.35	1.31
Azerbaijan	0.00	0.00	0.12		Czech Republic	0.00	0.00	0.40	
Bahamas	0.00	0.00		0.00	Côte d'Ivoire	0.00	0.00		
Bahrain	0.00	0.00	0.00	0.26	Denmark	0.00	0.00	0.05	
Bangladesh	0.00	0.00	0.06		Dominica	0.00	0.00		
Barbados	0.00	0.00		0.24	Dominican Republic	0.00	0.05		
Belgium	0.00	0.00	2.36		Ecuador	0.00	0.00		
Belize	0.00	0.00		0.02	Egypt	0.08	0.06	1.93	
Benin	0.00	0.00		0.00	El Salvador	0.00	0.00		
Bermuda	0.00	0.00	0.00		Estonia	0.00	0.00	0.03	
Bhutan	0.00	0.00			Ethiopia	0.00	0.00	0.00	7.62
Bolivia	0.00	0.00			Fiji	0.00	0.00	0.00	2.77
Bosnia and Herzegovina	0.00	0.00	0.01		Finland	0.00	0.00	0.60	
Botswana	0.00	0.00	0.00		Former Yugoslav Republic of Macedonia	0.00	0.00	2.89	
Brazil	0.00	0.00	1.64		France	0.00	0.02	0.60	
Brunei Darussalam	0.00	0.00			French Polynesia	0.00	0.00		
Bulgaria	0.00	0.04	8.47		Gambia	0.00	0.00		0.00
Burkina Faso	0.00	0.00		12.85	Georgia	0.00	0.00	1.62	1.34
Burundi	0.00	0.00	0.00	12.71	Germany	0.01	0.01	1.07	
Cabo Verde	0.00	0.00		0.01	Ghana	0.00	0.00		
Cambodia	0.00	0.00			Greece	0.04	0.05	2.78	
Cameroon	0.00	0.00			Greenland	0.00	0.00		

Table C.8. GTRIC-e, RCAP-e and RCAT-e for jewellery (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guatemala	0.00	0.02			Mexico	0.00	0.07	0.95	
Guinea	0.00	0.00			Moldova	0.00	0.00	0.02	0.05
Guyana	0.00	0.00		10.89	Mongolia	0.00	0.00		
Honduras	0.00	0.00			Montenegro	0.00	0.00		0.01
Hong Kong (China)	0.47	0.57	0.00	12.95	Morocco	0.20	0.15	0.34	
Hungary	0.00	0.00	0.01		Mozambique	0.00	0.00		
Iceland	0.00	0.00			Namibia	0.00	0.00		
India	0.01	0.03	2.48		Nepal	0.00	0.00	0.67	
Indonesia	0.05	0.09	0.82		Netherlands	0.02	0.01	1.15	
Iran	0.00	0.00	1.57		New Caledonia	0.00	0.00		
Ireland	0.00	0.00	0.00		New Zealand	0.00	0.00	0.00	0.66
Israel	0.00	0.00	0.43		Nicaragua	0.00	0.00		
Italy	0.00	0.00	1.04	0.57	Niger	0.00	0.00		1.73
Jamaica	0.00	0.00		0.24	Nigeria	0.00	0.00		
Japan	0.02	0.05	0.00		Norway	0.00	0.00	0.00	
Jordan	0.00	0.06	0.60	0.73	Oman	0.00	0.00	0.20	0.00
Kazakhstan	0.00	0.00	0.00		Pakistan	0.00	0.00		0.77
Kenya	0.00	0.00	0.00		Palestinian Authority*	0.00	0.00	0.00	0.01
Korea	0.03	0.07	1.41		Panama	0.00	0.07		
Kuwait	0.00	0.00			Papua New Guinea	0.00	0.00		
Kyrgyzstan	0.00	0.00	28.71	10.33	Paraguay	0.00	0.00		
Latvia	0.00	0.00	0.00		Peru	0.01	0.04	5.20	
Lebanon	0.00	0.03			Philippines	0.04	0.04	1.29	
Lesotho	0.00	0.00			Poland	0.00	0.00	0.00	
Lithuania	0.01	0.02	0.08		Portugal	0.00	0.00	0.47	
Luxembourg	0.00	0.00	0.00	0.31	Qatar	0.00	0.00	0.00	0.00
Macau (China)	0.00	0.49	0.00	0.00	Russia	0.01	0.02	5.13	
Madagascar	0.00	0.00		0.49	Rwanda	0.00	0.00		0.00
Malawi	0.00	0.00		0.00	Saint Vincent and the Grenadines	0.00	0.00		0.00
Malaysia	0.03	0.08	0.97		Samoa	0.00	0.00		0.01
Mali	0.00	0.00		14.69	Saudi Arabia	0.12	0.07		0.03
Malta	0.00	0.00	0.00		Senegal	0.00	0.00	1.57	
Mauritania	0.00	0.00			Serbia	0.00	0.00	0.00	
Mauritius	0.00	0.00	0.00	1.29	Seychelles	0.00	0.00		

Table C.8. GTRIC-e, RCAP-e and RCAT-e for jewellery (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Singapore	0.18	0.23	0.15		United States	0.04	0.06	0.00	0.76
Slovak Republic	0.00	0.00	0.00		Uruguay	0.00	0.00	0.00	
Slovenia	0.02	0.04	0.96		Vanuatu	0.00	0.00		
Solomon Islands	0.00	0.00		4.89	Venezuela	0.00	0.00		0.00
South Africa	0.01	0.01			Viet Nam	0.12	0.24	0.00	
Spain	0.00	0.00	1.32		Yemen	0.00	0.00	0.42	0.02
Sri Lanka	0.00	0.00	0.00	1.14	Zambia	0.00	0.00		
Sudan	0.00	0.00		5.17	Zimbabwe	0.00	0.00		5.52
Suriname	0.00	0.00		0.01					
Sweden	0.00	0.00	1.83						
Switzerland	0.17	0.01	0.62						
Tanzania	0.00	0.00							
Thailand	0.13	0.13	0.91	1.04					
Togo	0.00	0.00		0.00					
Tonga	0.00	0.00		0.35					
Tunisia	0.00	0.00							
Turkey	0.09	0.08	1.70						
Uganda	0.00	0.00		0.03					
Ukraine	0.07	0.15	0.74						
United Arab Emirates	0.11	0.15	0.00	1.88					
United Kingdom	0.01	0.04	0.93	2.57					

Table C.9. GTRIC-e, RCAP-e and RCAT-e for electronics and electrical equipment

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.00	0.00	0.00		Canada	0.03	0.04	0.44	0.49
Algeria	0.25	0.09			Central African Republic	0.00	0.00		
Andorra	0.00	0.00			Chile	0.10	0.05	0.30	
Antigua and Barbuda	0.00	0.00		0.07	China (People's Republic of)	1.00	1.00	1.59	
Argentina	0.04	0.02			Colombia	0.07	0.06	0.25	0.13
Armenia	0.02	0.02	0.24	0.15	Comoros	0.00	0.00		0.06
Aruba	0.13	0.06			Congo	0.09	0.05		
Australia	0.04	0.04	0.00		Costa Rica	0.00	0.00		
Austria	0.00	0.01	1.34		Croatia	0.01	0.01		
Azerbaijan	0.13	0.16	0.05		Cyprus*	0.01	0.01	0.32	1.19
Bahamas	0.00	0.03		0.00	Czech Republic	0.01	0.01	1.83	
Bahrain	0.00	0.04	0.66	0.03	Côte d'Ivoire	0.00	0.03		
Bangladesh	0.07	0.04	0.53		Denmark	0.00	0.01	0.79	
Barbados	0.00	0.00		0.63	Dominica	0.00	0.00		
Belarus	0.01	0.03	0.00		Dominican Republic	0.05	0.09		
Belgium	0.02	0.01	0.26		Ecuador	0.09	0.07		
Belize	0.00	0.19	0.23	0.00	Egypt	0.32	0.17	0.47	
Benin	0.00	0.00		0.09	El Salvador	0.00	0.00		
Bermuda	0.00	0.00	0.00		Estonia	0.00	0.00	1.49	
Bhutan	0.00	0.00			Ethiopia	0.03	0.01	0.00	0.34
Bolivia		0.13			Fiji	0.22	0.06	0.14	0.17
Bosnia and Herzegovina	0.02	0.01	0.17		Finland	0.01	0.01	2.61	
Botswana	0.00	0.00	0.00		Former Yugoslav Republic of Macedonia	0.00	0.00	0.51	
Brazil	0.03	0.04	1.34		France	0.00	0.02	0.82	
Brunei Darussalam	0.00	0.00			French Polynesia	0.00	0.00		
Bulgaria	0.00	0.01	0.89		Gambia	0.00	0.00		0.09
Burkina Faso	0.00	0.00		0.01	Georgia	0.02	0.03	0.04	0.14
Burundi	0.00	0.00	0.00	0.38	Germany	0.05	0.06	1.05	
Cabo Verde	0.00	0.00		0.00	Ghana	0.16	0.06	0.11	
Cambodia	0.22	0.18			Greece	0.02	0.04	0.38	
Cameroon	0.16	0.17	0.32		Greenland	0.00	0.00		

Table C.9. GTRIC-e, RCAP-e and RCAT-e for electronics and electrical equipment
(*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guatemala	0.00	0.01	0.21		Malta	0.00	0.00	0.00	
Guinea	0.00	0.00			Mauritius	0.00	0.00	0.00	0.03
Guyana	0.00	0.05		0.00	Mexico	0.05	0.06	0.62	
Honduras	0.00	0.00			Moldova	0.00	0.00	0.17	2.13
Hong Kong (China)	0.97	0.79	0.91	1.09	Mongolia	0.00	0.00		
Hungary	0.00	0.01	1.81		Montenegro	0.02	0.03		0.12
Iceland	0.00	0.00			Montserrat	0.00	0.00		0.01
India	0.09	0.08	1.03		Morocco	0.24	0.10	1.13	
Indonesia	0.09	0.07	0.77		Mozambique	0.00	0.00		
Iran	0.14	0.08	0.32		Namibia	0.00	0.00		
Iraq	0.00	0.00	0.33		Nepal	0.00	0.00	0.22	
Ireland	0.04	0.01	0.58		Netherlands	0.03	0.03	0.79	
Israel	0.01	0.01	1.85		New Caledonia	0.00	0.20		
Italy	0.00	0.04	0.75	1.06	New Zealand	0.01	0.01	0.00	0.71
Jamaica	0.00	0.02		0.02	Nicaragua	0.00	0.00		
Japan	0.02	0.04	0.00		Niger	0.00	0.00		0.07
Jordan	0.03	0.03	0.78	0.65	Nigeria	0.30	0.15	0.14	
Kazakhstan	0.03	0.02	0.00		Norway	0.02	0.01	0.40	
Kenya	0.00	0.00	0.00		Oman	0.00	0.00	1.14	0.13
Kiribati	0.00	0.00			Pakistan	0.19	0.09		0.06
Korea	0.08	0.22	2.95		Palau	0.00	0.00		1.40
Kuwait	0.00	0.02			Palestinian Authority*	0.00	0.00	0.11	0.04
Kyrgyzstan	0.00	0.00	0.18	0.37	Panama	0.00	0.05	0.12	
Latvia	0.00	0.00	0.14		Papua New Guinea	0.00	0.00		
Lebanon	0.11	0.08			Paraguay	0.00	0.09		
Lesotho	0.00	0.00			Peru	0.15	0.07	0.12	
Lithuania	0.00	0.00	0.42		Philippines	0.11	0.04	4.41	
Luxembourg	0.00	0.00	0.46	1.03	Poland	0.00	0.01	1.05	
Macau (China)	0.00	0.12	0.00	0.59	Portugal	0.00	0.00	0.82	
Madagascar	0.00	0.00		0.05	Qatar	0.09	0.04	0.10	0.01
Malawi	0.00	0.00		0.08	Romania	0.01	0.01	0.84	
Malaysia	0.13	0.10	2.13		Russia	0.06	0.04	0.49	
Maldives	0.00	0.00			Rwanda	0.00	0.00		0.16
Mali	0.17	0.08		0.03	Saint Kitts and Nevis	0.00	0.00		13.48

Table C.9. GTRIC-e, RCAP-e and RCAT-e for electronics and electrical equipment
(*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Saint Vincent and the Grenadines	0.00	0.00		0.12	Tonga	0.00	0.00		0.72
Samoa	0.00	0.00		12.65	Tunisia	0.06	0.03		
Sao Tome and Principe	0.00	0.00		0.02	Turkey	0.27	0.15	0.79	
Saudi Arabia	0.05	0.05		0.03	Turks and Caicos Islands	0.00	0.00		
Senegal	0.13	0.05	0.16		Uganda	0.00	0.00		0.08
Serbia	0.00	0.01	0.00		Ukraine	0.11	0.06	0.46	
Seychelles	0.00	0.00			United Arab Emirates	0.44	0.31	0.00	1.04
Singapore	0.55	0.27	1.15	1.08	United Kingdom	0.04	0.05	0.73	1.10
Slovak Republic	0.00	0.00	2.27		United States	0.21	0.13	0.00	1.49
Slovenia	0.03	0.01	1.72		Uruguay	0.00	0.03	0.15	
Solomon Islands	0.00	0.00		0.03	Vanuatu	0.00	0.00		
South Africa	0.09	0.03			Venezuela	0.00	0.00		0.00
Spain	0.05	0.03	0.53		Viet Nam	0.04	0.07	1.25	
Sri Lanka	0.03	0.05	0.44	0.50	Yemen	0.00	0.00	0.02	0.00
Sudan	0.00	0.00		0.00	Zambia	0.00	0.00		
Sweden	0.07	0.03	0.43		Zimbabwe	0.00	0.00		0.05
Switzerland	0.16	0.07	2.03						
Tanzania	0.06	0.02							
Thailand	0.34	0.17	2.26	0.81					
Timor-Leste	0.00	0.00							
Togo	0.00	0.00		0.01					

Table C.10. GTRIC-e, RCAP-e and RCAT-e for optical, photographic and medical equipment

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.08	0.13	0.01		Central African Republic	0.00	0.00		
Algeria	0.12	0.11	0.12		Chile	0.10	0.07	0.18	
Andorra	0.00	0.00			China (People's Republic of)	1.00	1.00	3.21	
Antigua and Barbuda	0.00	0.00		0.00	Colombia	0.03	0.06	0.55	0.04
Argentina	0.02	0.01			Comoros	0.00	0.00		0.01
Armenia	0.00	0.00	2.09	0.15	Congo	0.00	0.00		
Aruba	0.00	0.00			Costa Rica	0.00	0.00		
Australia	0.03	0.03	0.00		Croatia	0.00	0.00		
Austria	0.00	0.00	6.03		Cyprus*	0.00	0.00	0.77	0.07
Azerbaijan	0.00	0.05	0.34		Czech Republic	0.00	0.00	3.19	
Bahamas	0.00	0.00		0.00	Côte d'Ivoire	0.00	0.00		
Bahrain	0.00	0.09	0.00	0.01	Denmark	0.00	0.00	20.81	
Bangladesh	0.00	0.15	1.21		Dominica	0.00	0.11	0.02	
Barbados	0.00	0.00		2.46	Dominican Republic	0.00	0.02		
Belarus	0.00	0.00	0.00		Ecuador	0.00	0.00		
Belgium	0.00	0.00	2.12		Egypt	0.08	0.04	0.29	
Belize	0.00	0.00		0.01	El Salvador	0.00	0.06		
Benin	0.00	0.00		0.02	Estonia	0.00	0.00	2.80	
Bermuda	0.00	0.00	0.00		Ethiopia	0.04	0.03	0.00	0.29
Bolivia	0.00	0.00			Fiji	0.00	0.00	0.00	0.06
Bosnia and Herzegovina	0.04	0.05	2.20		Finland	0.00	0.00	4.90	
Botswana	0.00	0.00	0.00		Former Yugoslav Republic of Macedonia	0.00	0.00	0.43	
Brazil	0.03	0.04	2.08		France	0.00	0.00	8.36	
Brunei Darussalam	0.00	0.00			French Polynesia	0.00	0.00		
Bulgaria	0.04	0.03	2.19		Gambia	0.00	0.00		0.00
Burkina Faso	0.00	0.00		0.05	Georgia	0.00	0.00	0.37	0.11
Burundi	0.00	0.00	0.00	0.03	Germany	0.01	0.03	10.02	
Cabo Verde	0.00	0.00		0.00	Ghana	0.00	0.00		
Cambodia	0.00	0.14	1.23		Greece	0.13	0.16	1.55	
Cameroon	0.00	0.00			Greenland	0.00	0.00		
Canada	0.01	0.03	4.73	0.40	Guatemala	0.00	0.03		

Table C.10. GTRIC-e, RCAP-e and RCAT-e for optical, photographic and medical equipment (*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guinea	0.00	0.00			Montserrat	0.00	0.00		0.14
Guyana	0.00	0.00		0.00	Morocco	0.37	0.27	0.92	
Honduras	0.00	0.00			Mozambique	0.00	0.00		
Hong Kong (China)	0.71	0.62	0.00	1.29	Namibia	0.00	0.00		
Hungary	0.00	0.00	3.95		Nepal	0.00	0.00	0.00	
Iceland	0.00	0.00			Netherlands	0.01	0.01	5.66	
India	0.04	0.07	1.12		New Caledonia	0.00	0.00		
Indonesia	0.07	0.11	1.10		New Zealand	0.01	0.01	0.00	0.79
Iran	0.00	0.00	1.09		Nicaragua	0.00	0.00		
Ireland	0.00	0.00	42.27		Niger	0.00	0.00		0.05
Israel	0.00	0.00	41.29		Nigeria	0.00	0.09		
Italy	0.03	0.06	4.67	0.82	Norway	0.00	0.00	6.76	
Jamaica	0.00	0.00		0.00	Oman	0.00	0.00	0.00	0.00
Japan	0.00	0.01	0.00		Pakistan	0.14	0.14		0.51
Jordan	0.00	0.04	0.43	0.01	Palestinian Authority*	0.00	0.00	0.00	0.02
Kazakhstan	0.05	0.04	0.00		Panama	0.00	0.00		
Kenya	0.00	0.00	0.00		Papua New Guinea	0.00	0.00		
Korea	0.04	0.07	3.27		Paraguay	0.00	0.00		
Kuwait	0.00	0.15	0.01		Peru	0.00	0.00	0.00	
Kyrgyzstan	0.00	0.00	0.21	0.18	Philippines	0.09	0.08	4.33	
Latvia	0.00	0.00	1.86		Poland	0.00	0.00	2.09	
Lebanon	0.09	0.11			Portugal	0.00	0.00	1.69	
Lithuania	0.00	0.00	1.65		Qatar	0.00	0.00	0.00	0.00
Luxembourg	0.00	0.00	7.84	0.55	Romania	0.00	0.00	2.58	
Madagascar	0.00	0.00		0.10	Russia	0.02	0.01	0.42	
Malawi	0.00	0.00		0.05	Rwanda	0.00	0.00		0.11
Malaysia	0.13	0.13	1.91		Saint Kitts and Nevis	0.00	0.00		0.02
Mali	0.00	0.00		0.03	Saint Vincent and the Grenadines	0.00	0.00		0.00
Malta	0.02	0.02	0.00		Samoa	0.00	0.00		0.06
Mauritius	0.00	0.00	0.00	0.61	Sao Tome and Principe	0.00	0.00		0.02
Mexico	0.00	0.02	1.65		Saudi Arabia	0.07	0.13		0.00
Moldova	0.09	0.11	3.97	0.99	Senegal	0.18	0.09	0.29	
Mongolia	0.74	0.50	0.01		Serbia	0.00	0.00	0.00	
Montenegro	0.00	0.00		0.03	Seychelles	0.00	0.00		

Table C.10. GTRIC-e, RCAP-e and RCAT-e for optical, photographic and medical equipment (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Singapore	0.23	0.19	0.73		United States	0.09	0.13	0.00	1.87
Slovak Republic	0.00	0.00	2.65		Uruguay	0.00	0.10	0.00	
Slovenia	0.00	0.00	2.05		Vanuatu	0.00	0.00		
Solomon Islands	0.00	0.00		0.01	Venezuela	0.00	0.00		0.00
South Africa	0.00	0.00			Viet Nam	0.06	0.13	1.30	
Spain	0.03	0.02	2.38		Yemen	0.00	0.00	0.01	0.00
Sri Lanka	0.00	0.00	0.00	0.18	Zambia	0.00	0.00		
Sudan	0.00	0.00		0.00	Zimbabwe	0.00	0.00		0.01
Sweden	0.00	0.00	10.04						
Switzerland	0.03	0.03	38.18						
Tanzania	0.00	0.00							
Thailand	0.22	0.18	4.62	0.64					
Timor-Leste	0.00	0.00							
Togo	0.00	0.00		0.01					
Tonga	0.00	0.00		2.89					
Tunisia	0.07	0.06							
Turkey	0.22	0.15	2.01						
Uganda	0.00	0.00		0.04					
Ukraine	0.05	0.04	1.68						
United Arab Emirates	0.08	0.11	0.00	0.01					
United Kingdom	0.00	0.01	10.27	1.22					

Table C.11. GTRIC-e, RCAP-e and RCAT-e for toys, games and sports equipment

Average 2011-2013

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Albania	0.00	0.00	0.00		Canada	0.00	0.02	0.00	0.82
Algeria	0.00	0.00			Chile	0.00	0.00	0.00	
Andorra	0.00	0.00			China (People's Republic of)	1.00	1.00	4.23	
Antigua and Barbuda	0.00	0.00		0.05	Colombia	0.00	0.00	1.35	0.22
Argentina	0.02	0.04			Congo	0.00	0.00		
Armenia	0.20	0.18	0.16	1.03	Costa Rica	0.00	0.00		
Aruba	0.00	0.00			Croatia	0.00	0.00		
Australia	0.03	0.03	0.00		Cyprus*	0.00	0.00	0.46	0.18
Austria	0.00	0.01	11.80		Czech Republic	0.02	0.01	13.05	
Azerbaijan	0.00	0.00	0.01		Côte d'Ivoire	0.00	0.00		
Bahamas	0.00	0.00		0.00	Denmark	0.00	0.02	0.00	
Bahrain	0.00	0.34	0.00	1.01	Dominica	0.00	0.00		
Bangladesh	0.00	0.00	0.01		Dominican Republic	0.00	0.00		
Barbados	0.00	0.00		0.05	Ecuador	0.06	0.25		
Belarus	0.00	0.00	0.00		Egypt	0.00	0.00	0.01	
Belgium	0.01	0.01	0.71		El Salvador	0.00	0.00		
Belize	0.00	0.00		0.00	Estonia	0.00	0.00	2.53	
Benin	0.00	0.00		0.01	Ethiopia	0.00	0.00	0.00	0.07
Bermuda	0.00	0.00	0.00		Fiji	0.00	0.00	0.00	0.50
Bhutan	0.00	0.00			Finland	0.02	0.03	2.59	
Bolivia	0.00	0.08			Former Yugoslav Republic of Macedonia	0.00	0.00	0.18	
Bosnia and Herzegovina	0.00	0.00	0.00		France	0.00	0.00	2.19	
Botswana	0.00	0.00	0.00		French Polynesia	0.00	0.00		
Brazil	0.00	0.00	2.88		Gambia	0.00	0.00		0.00
Brunei Darussalam	0.00	0.00			Georgia	0.00	0.00	0.00	0.09
Bulgaria	0.02	0.02	9.01		Germany	0.00	0.00	2.83	
Burkina Faso	0.00	0.00		0.00	Ghana	0.00	0.00		
Burundi	0.00	0.00	0.00	0.00	Greece	0.16	0.14	0.81	
Cabo Verde	0.00	0.00		0.00	Greenland	0.00	0.00		
Cambodia	0.00	0.00			Guatemala	0.00	0.00		
Cameroon	0.00	0.00			Guinea	0.00	0.00		

Table C.11. GTRIC-e, RCAP-e and RCAT-e for toys, games and sports equipment
(*continued*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Guyana	0.00	0.00		0.00	Montenegro	0.00	0.00		0.22
Honduras	0.00	0.00			Morocco	0.12	0.10	1.01	1.02
Hong Kong (China)	0.60	0.56	0.00	1.02	Mozambique	0.00	0.00		
Hungary	0.01	0.01	3.86		Namibia	0.00	0.00		
Iceland	0.00	0.00			Nepal	0.00	0.00	0.00	
India	0.09	0.10	1.07		Netherlands	0.02	0.01	0.00	
Indonesia	0.05	0.04	2.10		New Caledonia	0.00	0.00		
Iran	0.00	0.00	0.08		New Zealand	0.00	0.00	0.00	0.51
Ireland	0.00	0.00	0.07		Nicaragua	0.00	0.00		
Israel	0.01	0.01	3.24		Niger	0.00	0.00		0.00
Italy	0.01	0.03	2.77	1.39	Nigeria	0.00	0.00		
Jamaica	0.00	0.00		0.01	Norway	0.00	0.00	2.24	
Japan	0.04	0.04	0.00		Oman	0.00	0.00	0.00	0.00
Jordan	0.00	0.00	0.07	0.01	Pakistan	0.09	0.06		0.22
Kazakhstan	0.00	0.00	0.00		Palestinian Authority*	0.00	0.00	0.00	1.64
Kenya	0.00	0.00	0.00		Panama	0.00	0.00		
Korea	0.05	0.08	0.95		Papua New Guinea	0.00	0.00		
Kuwait	0.00	0.00			Paraguay	0.00	0.15	0.21	
Kyrgyzstan	0.00	0.00	0.00	0.11	Peru	0.04	0.03	1.51	
Latvia	0.00	0.02	1.13		Philippines	0.09	0.06	4.58	
Lebanon	0.17	0.06	0.13		Poland	0.00	0.00	1.21	
Lithuania	0.00	0.00	1.42		Portugal	0.00	0.00	2.92	
Luxembourg	0.00	0.00	0.00	0.72	Qatar	0.00	0.00	0.00	0.00
Macau (China)	0.00	0.17	0.00	1.10	Romania	0.00	0.03	1.35	
Madagascar	0.00	0.00		0.92	Russia	0.02	0.02	0.00	
Malawi	0.00	0.00		0.05	Rwanda	0.00	0.00		0.01
Malaysia	0.01	0.05	0.65		Saint Kitts and Nevis	0.00	0.00		0.00
Maldives	0.00	0.00			Saint Vincent and the Grenadines	0.00	0.00		0.00
Mali	0.00	0.00		0.00	Samoa	0.00	0.00		0.10
Malta	0.00	0.00	0.00		Sao Tome and Principe	0.00	0.00		0.00
Mauritius	0.00	0.00	0.00	1.32	Saudi Arabia	0.00	0.26		1.10
Mexico	0.00	0.03	1.20		Senegal	0.00	0.00	0.00	
Moldova	0.00	0.00	1.86	0.07	Serbia	0.00	0.00	0.00	
Mongolia	0.00	0.00			Seychelles	0.00	0.00		

Table C.11. GTRIC-e, RCAP-e and RCAT-e for toys, games and sports equipment (*end*)

Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT	Provenance economy	GTRIC EU	GTRIC world	RCAP	RCAT
Singapore	0.48	0.36	0.01		United States	0.04	0.09	0.00	1.39
Slovak Republic	0.00	0.00	2.00		Uruguay	0.00	0.26	0.01	
Slovenia	0.00	0.00	5.86		Vanuatu	0.00	0.00		
Solomon Islands	0.00	0.00		0.00	Venezuela	0.00	0.00		0.00
South Africa	0.00	0.00			Viet Nam	0.04	0.05	0.00	
Spain	0.00	0.00	2.39		Yemen	0.00	0.00	0.00	0.00
Sri Lanka	0.00	0.00	0.00	3.11	Zambia	0.00	0.00		
Suriname	0.05	0.05		0.01	Zimbabwe	0.00	0.00		0.08
Sweden	0.00	0.00	1.63						
Switzerland	0.08	0.05	1.19						
Tanzania	0.00	0.00							
Thailand	0.12	0.09	4.70	1.47					
Timor-Leste	0.00	0.00							
Togo	0.00	0.00		0.02					
Tonga	0.00	0.00		0.87					
Tunisia	0.00	0.00							
Turkey	0.16	0.09	1.06						
Uganda	0.00	0.00		0.02					
Ukraine	0.02	0.09	1.14						
United Arab Emirates	0.30	0.23	0.00	1.12					
United Kingdom	0.00	0.01	3.04	1.48					

Table C.12. ISO codes for countries and territories

ISO3 code	Economy	ISO3 code	Economy	ISO3 code	Economy
ABW	Aruba	CHE	Switzerland	GRC	Greece
AGO	Angola	CHL	Chile	GRL	Greenland
ALB	Albania	CHN	China (People's Republic of)	GTM	Guatemala
AND	Andorra	CIV	Côte d'Ivoire	GUY	Guyana
ARE	United Arab Emirates	CMR	Cameroon	HKG	Hong Kong (China)
ARG	Argentina	COG	Congo	HND	Honduras
ARM	Armenia	COK	Cook Islands	HRV	Croatia
ATG	Antigua and Barbuda	COL	Colombia	HUN	Hungary
AUS	Australia	COM	Comoros	IDN	Indonesia
AUT	Austria	CPV	Cabo Verde	IND	India
AZE	Azerbaijan	CRI	Costa Rica	IRL	Ireland
BDI	Burundi	CYP	Cyprus*	IRN	Iran
BEL	Belgium	CZE	Czech Republic	IRQ	Iraq
BEN	Benin	DEU	Germany	ISL	Iceland
BFA	Burkina Faso	DMA	Dominica	ISR	Israel
BGD	Bangladesh	DNK	Denmark	ITA	Italy
BGR	Bulgaria	DOM	Dominican Republic	JAM	Jamaica
BHR	Bahrain	DZA	Algeria	JOR	Jordan
BHS	Bahamas	ECU	Ecuador	JPN	Japan
BIH	Bosnia and Herzegovina	EGY	Egypt	KAZ	Kazakhstan
BLR	Belarus	ESP	Spain	KEN	Kenya
BLZ	Belize	EST	Estonia	KGZ	Kyrgyzstan
BMU	Bermuda	ETH	Ethiopia	KHM	Cambodia
BOL	Bolivia	FIN	Finland	KIR	Kiribati
BRA	Brazil	FJI	Fiji	KNA	Saint Kitts and Nevis
BRB	Barbados	FRA	France	KOR	Korea
BRN	Brunei Darussalam	GBR	United Kingdom	KWT	Kuwait
BTN	Bhutan	GEO	Georgia	LBN	Lebanon
BWA	Botswana	GHA	Ghana	LKA	Sri Lanka
CAF	Central African Republic	GIN	Guinea	LSO	Lesotho
CAN	Canada	GMB	Gambia	LTU	Lithuania

Table C.12. ISO codes for countries and territories (*continued)*

ISO3 code	Economy	ISO3 code	Economy	ISO3 code	Economy
LUX	Luxembourg	PNG	Papua New Guinea	USA	United States
LVA	Latvia	POL	Poland	VCT	Saint Vincent and the Grenadines
MAC	Macau (China)	PRT	Portugal	VEN	Venezuela
MAR	Morocco	PRY	Paraguay	VNM	Viet Nam
MDA	Moldova	PSE	Palestinian Authority*	VUT	Vanuatu
MDG	Madagascar	PYF	French Polynesia	WSM	Samoa
MDV	Maldives	QAT	Qatar	YEM	Yemen
MEX	Mexico	ROU	Romania	ZAF	South Africa
MKD	Former Yugoslav Republic of Macedonia	RUS	Russia	ZMB	Zambia
MLI	Mali	RWA	Rwanda	ZWE	Zimbabwe
MLT	Malta	SAU	Saudi Arabia		
MNE	Montenegro	SDN	Sudan		
MNG	Mongolia	SEN	Senegal		
MOZ	Mozambique	SGP	Singapore		
MRT	Mauritania	SLB	Solomon Islands		
MSR	Montserrat	SLV	El Salvador		
MUS	Mauritius	SRB	Serbia		
MWI	Malawi	STP	Sao Tome and Principe		
MYS	Malaysia	SUR	Suriname		
NAM	Namibia	SVK	Slovak Republic		
NCL	New Caledonia	SVN	Slovenia		
NER	Niger	SWE	Sweden		
NGA	Nigeria	SYC	Seychelles		
NIC	Nicaragua	TCA	Turks and Caicos Islands		
NLD	Netherlands	TGO	Togo		
NOR	Norway	THA	Thailand		
NPL	Nepal	TLS	Timor-Leste		
NZL	New Zealand	TON	Tonga		
OMN	Oman	TUN	Tunisia		
PAK	Pakistan	TUR	Turkey		
PAN	Panama	TZA	Tanzania		
PER	Peru	UGA	Uganda		
PHL	Philippines	UKR	Ukraine		
PLW	Palau	URY	Uruguay		

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Notes

[1] Goods that infringe trademarks, copyrights, patents or design rights.

[2] This definition of "provenance economies" is used only in this study. It should not be confused with the definition used by the World Customs Organization, which uses the term "provenance" for the last economy that the goods passed through. See, e.g., www.wcoomd.org/en/topics/origin/overview/challenges.aspx.

[3] For more details see www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx.

[4] The customs data identifies a set of EU member countries as provenances. However, these data refer in most cases to the points of entry of fake goods to the EU. Consequently these economies will not be included in the analysis.

[5] This number includes trademark applications included in the Nice product classifications (see next note) 29 (Meat, fish, poultry and game; meat extracts; preserved, frozen, dried and cooked fruits and vegetables; jellies, jams, compotes; eggs; milk and milk products; edible oils and fats); and 30 (Coffee, tea, cocoa and artificial coffee; rice; tapioca and sago; flour and preparations made from cereals; bread, pastry and confectionery; ices; sugar, honey, treacle; yeast, baking-powder; salt; mustard; vinegar, sauces (condiments); spices; ice).

[6] The Nice Agreement establishes a classification of goods and services for the purposes of registering trademarks and service marks. The product classification can be found at: www.wipo.int/classifications/nivilo/nice/index.htm?lang=FR#.

[7] This number includes the trademarks applications included in the Nice product classification 05 (Pharmaceutical and veterinary preparations; sanitary preparations for medical purposes; dietetic food and substances adapted for medical or veterinary use, food for babies; dietary supplements for humans and animals; plasters, materials for dressings; material for stopping teeth, dental wax; disinfectants; preparations for destroying vermin; fungicides, herbicides).

[8] This number includes the trademark applications included in the Nice product classification 03 (bleaching preparations and other substances for laundry use; cleaning, polishing, scouring and abrasive preparations; soaps; perfumery, essential oils, cosmetics, hair lotions; dentifrices).

[9] This number includes the trademark applications included in the Nice product classification 18 (Leather and imitations of leather, and goods made of these materials and not included in other classes; animal skins, hides; trunks and travelling bags; umbrellas and parasols; walking sticks; whips, harness and saddlery).

[10] This number includes the trademark applications included in the Nice product classification 25 (Clothing, footwear, headgear).

[11] This number includes the trademark applications included in the Nice product classification 25 (Clothing, footwear, headgear).

[12] This number includes the trademark applications included in the Nice product classification 14 (Precious metals and their alloys and goods in precious metals or coated therewith, not included in other classes; jewellery, precious stones; chorological and chronometric instruments).

[13] This number includes the trademark applications included in the Nice product classification 09 (Scientific, nautical, surveying, photographic, cinematographic, optical, weighing, measuring, signalling, checking (supervision), life-saving and teaching apparatus and instruments; apparatus and instruments for conducting, switching, transforming, accumulating, regulating or controlling electricity; apparatus for recording, transmission or reproduction of sound or images; magnetic data

carriers, recording discs; compact discs, DVDs and other digital recording media; mechanisms for coin-operated apparatus; cash registers, calculating machines, data processing equipment, computers; computer software; fire-extinguishing apparatus.).

[14] This number includes the patents registered by the WIPO for the following technologies: electrical machinery, apparatus, energy (1); audio visual technology (2); telecommunications (3); digital communication (4); basic communication processes (5).

[15] This number includes the patents registered by the WIPO for the following technologies: optics (9); measurement (10); analysis of biological materials (11); and medical technology (13).

[16] This number includes the trademarks applications included in the Nice product classification 28 (Games and playthings; gymnastic and sporting articles not included in other classes; decorations for Christmas trees).

[17] This is different to the economy's share of total imports of sensitive goods used to calculate GTRIC-p.

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Mapping the Real Routes of Trade in Fake Goods

Trade in counterfeit and pirated goods is a vital threat for modern, innovation-driven economies, a worldwide phenomenon that grows in scope and magnitude. Counterfeiters ship infringing products via complex routes, with many intermediary points, which poses a substantial challenge to efficient enforcement. This study looks at the issue of the complex routes of trade in counterfeit pirated goods. Using a set of statistical filters, it identifies key producing economies and key transit points. The analysis is done for ten main sectors for which counterfeiting is the key threat. The results will facilitate tailoring policy responses to strengthen governance frameworks to tackle this risk, depending on the profile of a given economy that is known as a source of counterfeit goods in international trade.

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