MAGNITUDE OF COUNTERFEITING AND PIRACY OF TANGIBLE PRODUCTS: AN UPDATE

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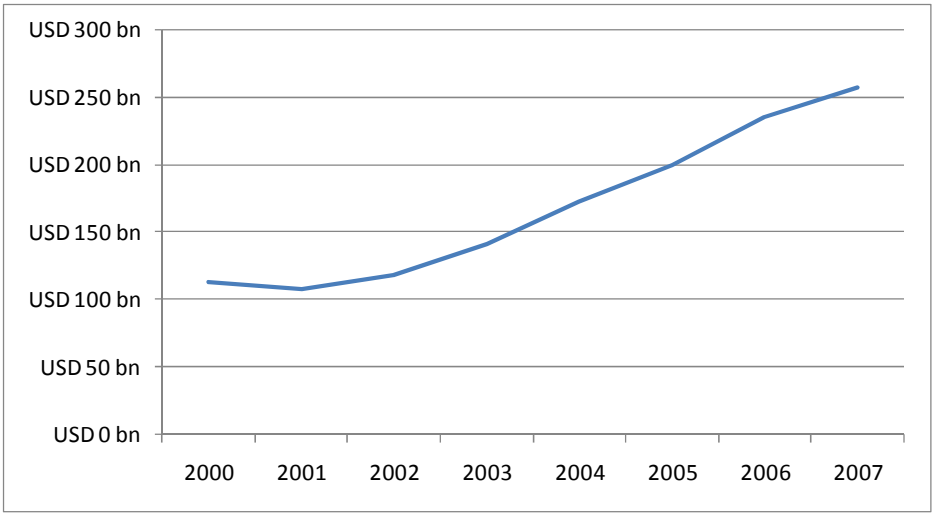
The growing importance of intellectual property (IP) in knowledge-based economies has generated concerns about the potential adverse effects of counterfeiting and piracy on governments, rights holders and consumers. A recent OECD study on counterfeiting and piracy (OECD, 2008)[1] attempted to quantify the scale of the effects due to these illicit activities. This study focused on the infringement, through counterfeiting and piracy, of trademarks, copyrights, patents and design rights, to the extent that they involved physical products.

Based on the framework developed in OECD (2008) this short report updates the quantitative results of that study by utilising more recent international trade statistics for the calendar years 2000 to 2007. This report does not, however, update the customs interception data on which the original framework was constructed and relies on the same, aggregated customs interception data (*i.e.* for 1999-2005). A methodological note describing the updating process in more detail is attached below.

The OECD (2008) study concluded that international trade in counterfeit and pirated goods could have accounted for up to USD 200 billion in 2005. The updated estimates, based on the growth and changing composition of trade between 2005 and 2007, suggest that counterfeit and pirated goods in international trade grew steadily over the period 2000 – 2007 and could amount to up to USD 250 billion in 2007 (Figure 1). The share of counterfeit and pirated goods in world trade is also estimated to have increased from 1.85% in 2000 to 1.95% in 2007. As in the original study, these figures do not include domestically produced and consumed products, or non-tangible pirated digital products.

Figure 1: Evolution of trade in counterfeit and pirated products (upper limit)



[1] OECD (2008), *The Economic Impact of Counterfeiting and Piracy*, OECD, Paris, see *www.oecd.org/sti/counterfeiting*

Methodological Note

This report updates the quantitative results of OECD (2008), based on the framework developed in that study. The update involves applying detailed indices of counterfeiting (called GTRIC, presented below) to international trade statistics for the calendar years 2000 – 2007.

To build the foundation on which the magnitude of counterfeiting and piracy in world trade could be analysed for the 2008 study, the OECD conducted a survey in co-operation with the World Customs Organization (WCO). Seventy responses were received from national customs authorities, providing information on interceptions of infringements, recorded at any time during the period 1999 to 2005. Based on these responses two general trade-related indices of counterfeiting and piracy (GTRIC) were constructed:

- A general trade-related index of counterfeiting and piracy of economies (GTRIC-*e*), and
- A general trade-related index of counterfeiting and piracy of products (GTRIC-*p*).

The General Trade-Related Index of Counterfeiting for economies (see Table A1 in the Annex) presents the relative intensity with which a given economy exports counterfeit and pirated products. The term "relative" means that for a given economy GTRIC-*e* indicates the average intensity of its counterfeit exports, taking the economy with the highest share of exports of counterfeit and pirated products as a benchmark. GTRIC-*e* was constructed in three steps. First, for each reporting economy seizures of counterfeit and pirated products are compared to general trade volumes and the respective seizure percentages are calculated. Second, based on these percentages, each exporting economy is assigned a counterfeiting factor. Third, based on these factors the GTRIC-*e* is formed.

A similar exercise was performed for detailed categories of tradable goods, and the results are summarized in Table A2 in the Annex that presents the GTRIC-*p* index. GTRIC-*p* is based on the 2-digit categories of the Harmonized System (HS) [2] and establishes the relative likelihood for products in one category to be counterfeit relative to another. This exercise was performed for all 96 HS categories of reporting economies by dividing the seizure percentages of source economies by the economies' respective import share of the reporting economy's total imports (across the 145 known source economies). As with GTRIC-*e*, GTRIC-*p* is a point estimate of the relative counterfeiting propensity for products, which also refers to the baseline.

To generate the final result both indices, GTRIC-*p* and GTRIC-*e* are multiplied and the outcome is the GTRIC matrix of 96 (products) times 134 (economies). Each entry in this matrix corresponds to the relative propensity of a given product category exported from a given economy to contain counterfeited and pirated products.

To measure the magnitude of counterfeiting and piracy in world trade, the GTRIC matrix can be applied to statistics on international trade. The trade statistics used in this report cover the period between 2000 and 2007 and are derived from the UN Comtrade Database. The data is categorized according to the HS and corresponds to the 96 categories used in the GTRIC-*p* index.

As noted in OECD (2008) the estimation of magnitude of counterfeiting and piracy in international trade is not free from certain biases, most of which were discussed in the main report.

[2] The Harmonized System is a commodity classification system in which articles are grouped largely according to the nature of the materials of which they are made, as has been traditional in customs nomenclatures.

Moreover, even though some smoothing techniques have been applied to both GTRIC-*p* and GTRIC-*e* in order to control for static (*i.e.* time invariant) distortions, these techniques do not address the bias related to the potential time-variance of the GTRIC. The GTRIC relies on aggregated customs data over a seven year period and consequently, the update presented in this report relies on an implicit assumption that the GTRIC does not vary significantly between the period represented in the data collection (1999-2005), and the period analysed in the review (2006-07). While the validity of this assumption is considered to be acceptable for the relatively short period covered in this update, it would rapidly decline the further the trade data used diverge from the GTRIC customs data. It may therefore not be appropriate to update the estimates beyond 2007, especially given the current economic crisis and the considerable structural changes resulting in international trade flows. Further assessments of the share of counterfeiting and piracy in international trade would therefore require a new detailed assessment of customs data on seizures.

To obtain an index of the evolution of trade in counterfeit and pirated products, the GTRIC matrix is multiplied with the corresponding matrix of world exports for each year in the period 2000–2007. This exercise leads to an index of the evolution of trade in counterfeit and pirated products in absolute values. A comparison of this index with an index of the evolution of total world trade permits analysis of the share of trade in counterfeit and pirated goods in total trade volumes. Both are presented in Table 1.

Table 1: The evolution of trade in counterfeit and pirated products

Year	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Evolution of trade in counterfeit and pirated products (in absolute values; 2005 = 100)	56.5	53.9	59.1	70.5	86.0	100.0	117.6	128.5
Evolution of trade in counterfeit and pirated products (as a share of total trade; 2005 = 100)	91.9	91.2	95.1	96.7	97.4	100.0	101.0	98.9

Unsurprisingly, given the growth in international trade in 2000-07 these updated results suggest that trade in counterfeit and pirated products grew steadily over the period 2000 – 2007, and in particular, between 2005 and 2007 it grew by more than 25%.

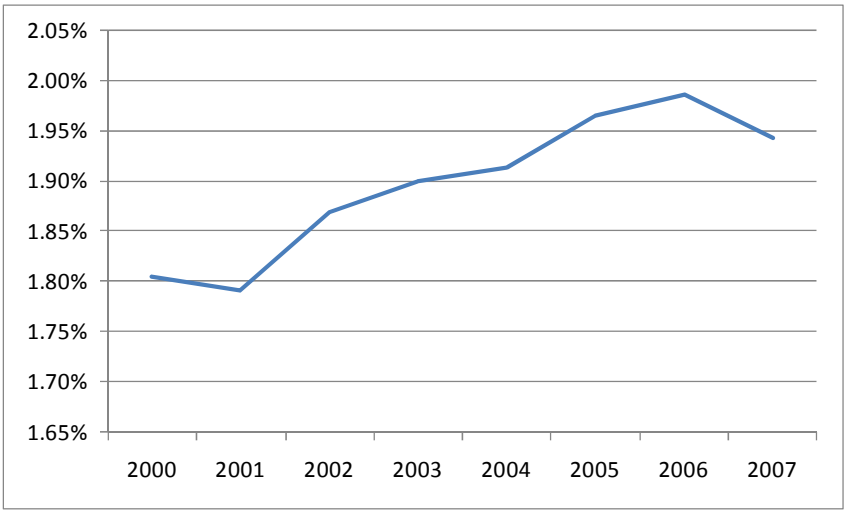
The OECD (2008) study concluded that in 2005 international trade in counterfeit and pirated goods could have accounted for up to USD 200 billion. This result can be now be updated to reflect 2006 and 2007 data by using the index of evolution of trade in counterfeit and pirated products in absolute values (Table 1 and Figure 1) to derive an updated figure. The update suggests that counterfeit and pirated goods in international trade could have amounted for up USD 250 billion in 2007.

Apart from the growing total value of trade in counterfeit and pirated products, the share of counterfeit and pirated goods in world trade also seems to have grown (see Table 1). Between 2000 and 2007, counterfeited and pirated products appear to have increased their share in total world trade from 1.85% in 2000 to 1.95% in 2007. While numerically small this increase is significant, given that world trade more than doubled over that period,

The dip in 2007 (Figure 2) could be explained by overall trade growing at a faster rate than the expected growth of counterfeited and pirated goods. This could be attributed to the rapid growth of trade in commodities (such as raw materials) that are less prone, or not prone at all, to counterfeiting. A detailed analysis of this question goes beyond the scope of this update, but further detail on the composition of trade and the relative likelihood of product categories to be counterfeit can be found in the 2008 report.

Figure 2: Evolution of trade in counterfeit and pirated products

(as a percentage of total trade)



Policies and measures

Counterfeiting and piracy compel strong and sustained action from governments, business and consumers. Measures to address counterfeiting and piracy include developing more effective enforcement and building public support to combat the counterfeiting and piracy. Increased co-operation between governments, and with industry, would be beneficial, as would better data collection. This update, which includes estimates that suggest that the problem of counterfeiting and piracy has continued to grow, serves to reiterate the call on governments to consider improving legal and regulatory frameworks, enhance enforcement and deepen the evaluation of policies, programmes and practices.

At the national governmental level, two of the principal challenges in combating counterfeiting and piracy are: 1) to find ways to enhance enforcement; and 2) to raise awareness of counterfeiting and piracy issues. Domestically, governments may consider improving legal and regulatory frameworks, enhancing enforcement and deepening the evaluation of policies, programmes and practices. Ways to strengthen the existing framework and practices could be explored multilaterally.

While the 2008 OECD study and this update have been able to provide insights into the situation, we also repeat the conclusions drawn in the 2008 report that the information base needs to be further strengthened. Governments, business and other interested stakeholders should continue to collect and analyse information that is essential for designing and implementing effective strategies for combating counterfeiting and piracy. Improved information would enable more far-reaching analyses to be carried out on the magnitude and effects of counterfeiting and piracy on economies. In turn, this would provide governments and other stakeholders with a firmer basis for developing more informed and effective policies and programmes to address these practices.

ANNEX

Table A1: General trade-related index of counterfeiting and piracy of economies (GTRIC-*e*)

Economy	*GTRICe*
Afghanistan	2.351017
Albania	1.221637
Algeria	0.23113
Angola	0.048601
Argentina	0.103271
Armenia	0.772296
Australia	0.094092
Austria	0.024619
Azerbaijan	0.001417
Bahamas	0.360889
Bahrain	0.498182
Bangladesh	0.494885
Belarus	0.071216
Belgium	0.064524
Bolivia	0.69111
Bosnia Herzegovina	0.007447
Botswana	0.846791
Brazil	0.127407
Brunei	0.540795
Bulgaria	0.37755
Cambodia	0.781277
Cameroon	0.27964
Canada	0.057086
Chile	0.010157
China	1.437774
China, Hong Kong SAR	2.856343
China, Macao SAR	0.960184
Chinese Taipei	0.995363
Colombia	0.244002
Costa Rica	0.039002
Cote d'Ivoire	0.150357
Croatia	0.299896
Cyprus	1.540444
Czech Rep.	0.249195
Dem. Rep. of the Congo	0.155363
Denmark	0.094505
Djibouti	0.728013
Dominican Rep.	0.286636
Ecuador	0.382447
Egypt	0.528218
Estonia	0.316013
Fiji	0.001902
Finland	0.053468
France	0.086579
Georgia	1.024696

Economy	*GTRICe*
Germany	0.039872
Ghana	0.445089
Greece	0.190079
Guatemala	0.253155
Haiti	0.396415
Honduras	0.347135
Hungary	0.117529
India	0.641394
Indonesia	0.50952
Iran	0.897601
Iraq	0.486533
Israel	0.116429
Italy	0.384653
Jamaica	0.663663
Japan	0.046304
Jordan	0.65896
Kazakhstan	0.39835
Kenya	0.94533
Kuwait	0.228373
Kyrgyzstan	1.770402
Laos	2.849408
Latvia	0.136714
Lebanon	1.733032
Libya	0.000801
Lithuania	0.784599
Luxembourg	0.549484
Madagascar	0.300687
Malaysia	1.296085
Maldives	0.598105
Mali	0.052417
Malta	0.8876
Mauritius	0.594848
Mexico	0.077074
Mongolia	0.840518
Morocco	0.749408
Mozambique	0.01625
Myanmar	0.752559
Nepal	0.001413
Neth. Antilles	0.990316
Netherlands	0.063505
New Zealand	0.042885
Nicaragua	0.223638
Nigeria	0.21385
Norway	0.00762
Oman	0.532247

Economy	*GTRICe*
Pakistan	1.657459
Panama	1.02897
Papua New Guinea	0.000372
Paraguay	1.54626
People's Rep. of Korea	1.939676
Peru	0.677267
Philippines	1.116753
Poland	0.109972
Portugal	0.152092
Qatar	0.001902
Rep. of Korea	0.635958
Rep. of Moldova	1.120815
Romania	0.36342
Russian Federation	0.258173
Saudi Arabia	0.139165
Senegal	0.464653
Serbia and Montenegro	0.206386
Singapore	0.467796
Slovakia	0.003566
Slovenia	0.20471
South Africa	0.181244
Spain	0.212384
Sri Lanka	1.035163
Suriname	0.082067
Switzerland	0.22732
Syria	0.955119
Tajikistan	0.609951
TFYR of Macedonia	0.920952
Thailand	2.176103
Togo	1.915335
Tokelau	1.761901
Trinidad and Tobago	0.067655
Tunisia	0.026303
Turkey	1.081725
Turkmenistan	0.801172
Ukraine	1.025599
United Arab Emirates	2.058198
United Kingdom	0.127595
United States	0.137188
Uruguay	0.004343
Uzbekistan	1.520067
Venezuela	0.069918
Viet Nam	1.366506
Yemen	1.045195

Source: OECD (2008)

Table A2: General trade-related index of counterfeiting and piracy of products (GTRIC-*p*)

HS Category	*GTRICp*
HS-01	0.27631
HS-02	0.27631
HS-03	0.27631
HS-04	0.27631
HS-05	0.29092
HS-06	0.28975
HS-07	0.27631
HS-08	0.27631
HS-09	0.27631
HS-10	0.27631
HS-11	0.27631
HS-12	0.27631
HS-13	0.35636
HS-14	0.27631
HS-15	0.27631
HS-16	0.27744
HS-17	0.53122
HS-18	0.27631
HS-19	0.28227
HS-20	0.45625
HS-21	0.28847
HS-22	0.42519
HS-23	0.27631
HS-24	0.99312
HS-25	0.27631
HS-26	0.27631
HS-27	0.27631
HS-28	0.27631
HS-29	0.2766
HS-30	0.3
HS-31	0.27631
HS-32	0.28171
HS-33	0.62998
HS-34	0.29698
HS-35	0.38717
HS-36	0.27631
HS-37	0.61787
HS-38	0.27678
HS-39	0.3278
HS-40	0.34486
HS-41	0.29973
HS-42	0.99358
HS-43	0.27631
HS-44	0.29599
HS-45	0.27631
HS-46	0.31604
HS-47	0.27631
HS-48	0.52389
HS-49	0.42442
HS-50	0.30672

HS Category	*GTRICp*
HS-51	0.27631
HS-52	0.29623
HS-53	0.27631
HS-54	0.30758
HS-55	0.29055
HS-56	0.34057
HS-57	0.32939
HS-58	0.9097
HS-59	0.30343
HS-60	0.3019
HS-61	0.96895
HS-62	0.27631
HS-63	0.5455
HS-64	0.93326
HS-65	0.99493
HS-66	0.9892
HS-67	0.31971
HS-68	0.3214
HS-69	0.2872
HS-70	0.33226
HS-71	0.45294
HS-72	0.27631
HS-73	0.2959
HS-74	0.28463
HS-75	0.27631
HS-76	0.28383
HS-77	0.27631
HS-78	0.27631
HS-79	0.27631
HS-80	0.29719
HS-81	0.32127
HS-82	0.44914
HS-83	0.53166
HS-84	0.29958
HS-85	0.64831
HS-86	0.27631
HS-87	0.27937
HS-88	0.27631
HS-89	0.27631
HS-90	0.41986
HS-91	0.98614
HS-92	0.27631
HS-93	0.47165
HS-94	0.52992
HS-95	0.86045
HS-96	0.90066
HS-97	0.29858
HS-98	0.27631
HS-99	0.27631

Source: OECD (2008)