Chapter 6 – Attributes of criminal justice systems: resources, performance and punitivity

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Abstract

This chapter focuses on attributes of the criminal justice system itself, namely on resources of the system, its performance and the systemic punitivity. Regarding resources, it focuses on police and prosecution personnel, professional judges and the staff in adult prisons. With respect to performance, quantitative productivity of the different criminal justice systems is analyzed, focusing on the rates of persons suspected per police officer, persons prosecuted per prosecutor, persons brought before a criminal court per prosecutor and persons convicted per prosecutor. Finally, systemic punitivity is estimated by the rate of total persons incarcerated per total persons convicted. The chapter covers data not only from the 10th UN-CTS, but also from earlier waves, back as late as to the 6th wave for trend analysis. As in the other chapters, the scale is worldwide. Trying to cover as many countries as possible, data for the analysis of the most recent status quo was not only taken from the 10th UN-CTS survey, but also from the 7th to 9th waves, with the year 2000 being the earliest "latest available" year covered here. For trend analysis, the preferred starting year was 1995, the first point in time in the 6th wave. If necessary, trend analysis was made for shorter periods of time instead.

Criminal justice system resources

Firstly, we will take a close look at criminal justice system resources. As in preceding publications based on UN-CTS data (Marshall 1998; Mayhew 2003; Gruszczynska, Marshall 2008), once again the resources variables analyzed have been restricted to personnel variables. While the UN-CTS questionnaire also asks for data on financial resources in all its sections (police, prosecution, courts, and prisons), these data have been excluded from analysis due to problems regarding the interpretation: The resources were to be added up to a single variable per chapter. The value had to be given in millions of local currency units. Such a value would be extremely hard to compare between countries. First of all, the comparability of a single monetary value representing the whole police (etc.) budget would be extremely questionable, as long as it is not clear which budget posts have been included there and which not. Moreover, the exchange rate problem will render comparison between countries almost impossible, especially with respect to countries with a large variance in the rates.

Small countries with a population of less than 100,000 persons have been excluded from analysis (except where noted otherwise) because it could be feared that these data might be misleadingly different from results for larger countries because of the special structure and necessities of very small countries.

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Police personnel

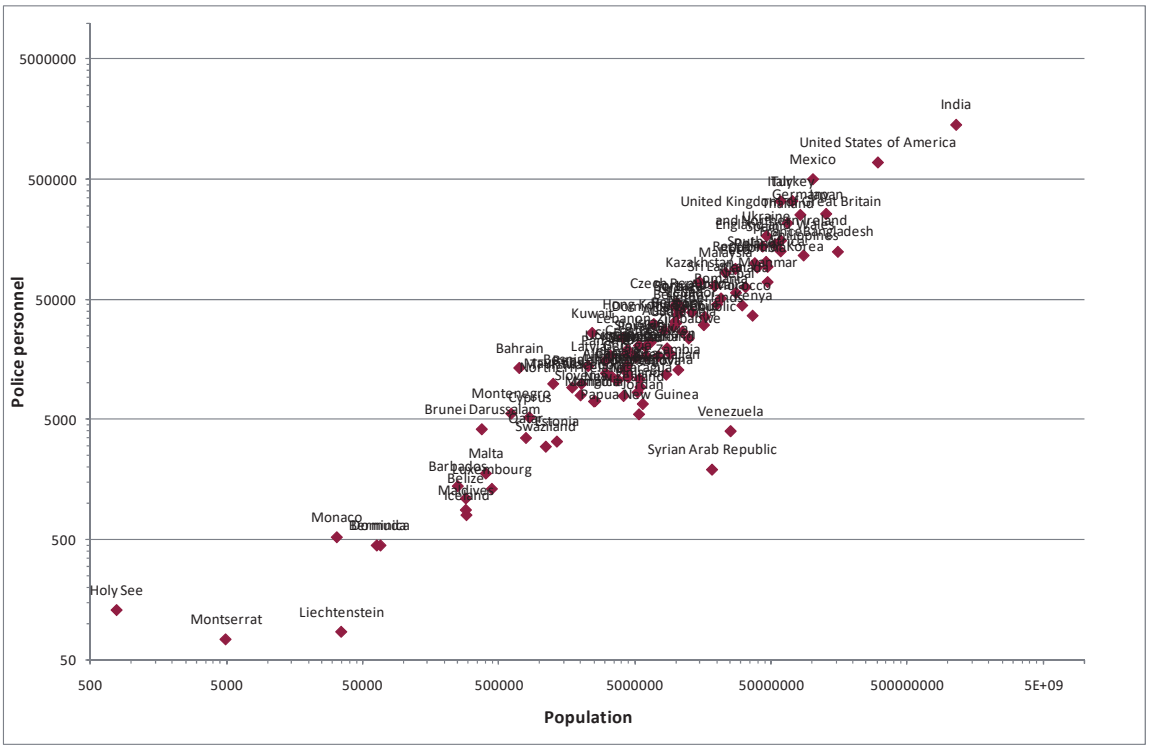
The 10th UN-CTS questionnaire defines "police personnel or law enforcement personnel" as "personnel in public agencies whose principal functions are the prevention, detection and investigation of crime and the apprehension of alleged offenders. Data concerning support staff (secretaries, clerks, etc.) should be excluded from your replies." The definition is in line with the definition used in earlier survey waves covered here (6th to 9th).

Regarding police personnel, the questionnaire not only asks for the total, but also for the number of females, males and police officers assigned to the policing of organized crime. Apart from this, the questionnaire includes some metadata on the police, like whether there was more than one police force in the relevant country etc.

Still, data analysis in this publication has been restricted to the total of police personnel (for analysis of rates of female officers see previous publications: Mayhew 2003; Gruszczynska, Marshall 2008). Attempting to measure the total police personnel with only one value, one has to keep in mind the shortcomings of such an approach: The police force is not a monolithic entity with similar structures and tasks all over the world. There are several types of police forces that might exist in one country, but not in another. Also, the tasks executed by the police may differ between countries. Thus, figures might include (or not include) data on criminal police, traffic police, border police, gendarmerie, uniformed police, city guard or municipal police, but also customs officers, tax police, military police, secret service police, police reserves, cadet police officers or court police. Apart from this, the way of counting personnel might differ (e.g. heads vs. budget posts, which will make a difference when counting part-time personnel). Therefore, comparability could be considered fairly weak. One cannot be sure that each and every country was able to exclude support staff from their data, because this would depend on the statistical possibility to do so. Also, it is not fully clear whether, apart from support staff, other civilians in the police force are included or only uniformed police are counted.

As in earlier waves of the UN-CTS, information on private security personnel is not included in the data, although the private security sector is of great importance in many countries, thus making comparisons even more problematic (Marshall 1998; Mayhew 2003; Gruszczynska, Marshall 2008).

Figure 1. Police personnel by population (including small countries; log. scales)

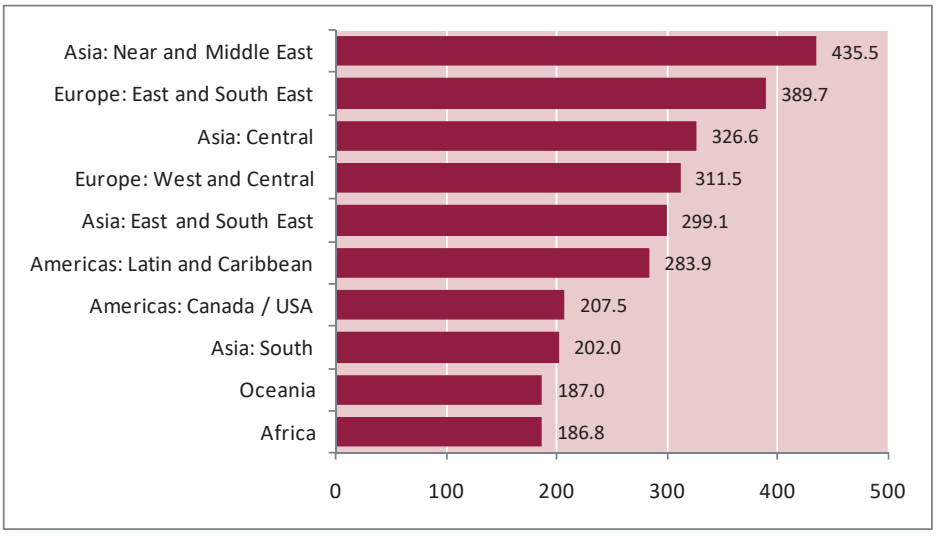


As figure 1 shows, while comparability of police personnel levels between countries can still be considered an issue, the absolute police personnel figures are at least quite clearly dependent on the population size. I.e., even taking into account all the differences in police personnel levels between countries, there is an almost perfect linear dependency of police personnel from population size. The correlation coefficient is 0.93, R^2 0.87. Therefore, about 87 % of the variance in the police personnel figures can be explained by population size. The distribution in figure 1 shows only very few clear outliers. Even among small countries below 100,000 population only one real outlier can be identified, the Holy See with a very high police personnel value compared to population size. This special result can of course be explained by the special structure and security necessities of Vatican City. On the other hand, the police personnel values for Venezuela and for the Syrian Arab Republic are far below the usual.

If one looks at the police personnel rates per 100,000 population (see figure 2 and table 1), there are some interesting results. The median is 303.3 police officers per 100,000 population, while the mean is 341.8. The standard deviation is quite high (241.5). This can be explained by the aforementioned problems in measuring the strength of the police force(s) of a country in a single variable, and by structural differences between countries.

The distribution of police personnel values is clearly positively skewed. An explanation might be that there is a minimum number of police officers per 100,000 population that is by any means necessary in any country to guarantee at least minimum security, while there is no such clear limit at the top end (although budgetary limits will prevent personnel figures from becoming too high).

Figure 2. Police officers per 100,000 population by regions and sub-regions (medians)



The assumption of a necessary minimum number of police officers in a certain country can also be backed by the individual country results as presented in table 1 in the Annex. Only four countries show police personnel values lower than 100 officers per 100,000 population, and only two have values that are far below that level. For these two countries (Venezuela and Syrian Arab Republic) the respective values are so low (16 and 10, respectively) that one can quite definitely assume that they do not represent the whole police force of these two countries. Figure 1 also showed that the values for these countries are clear outliers.

Figure 2 shows summary results for regions and sub-regions. As can be seen by these results, there are two regions in the world with relatively high numbers of police personnel (around 400), the Near and Middle East as well as East and South East Europe. Central, East and South East Asia, Latin America and the Caribbean as well as West and Central Europe show median rates around the overall median, i.e. around about 300. Lower levels of police officers (median around 200) can be found in Africa, Canada, USA, South Asia and Oceania.

As could be expected, the countries with the highest police personnel figures are often located in regions where the median is quite high, too (see table 1). This is the case for Bahrain (1867 police officers per 100,000 population), Kuwait (1065) and Montenegro (891), but not for Brunei Darussalam (1087) and Mauritius (777).

Table 1 also shows the trends in the development of police personnel figures. Where possible (i.e. for the minimum of a three-year trend) average annual change rates have been calculated. The longest trends cover 11 years (1995 – 2006). Data have been validated, especially with respect to trend analysis, and unreliable data, e.g. values in certain survey waves that did not fit the responses from the other waves, have been deleted, or, where possible, replaced with the right values. Details on this process can be found in the technical Annex to this chapter.

As can be seen, police personnel figures tend to be quite stable across time. The mean and median of the change rates per year are around 0 % with a standard deviation of 2.5 percentage points. However, some countries show larger increases or decreases across longer periods of time, reflected in average annual change rates around 5 %, e.g. the Republic of Moldova, Slovenia or Turkey with average yearly increases of 4.7 %, 6.4 % and 7.4 % across an eleven-year period. Remarkable decreases over longer periods of time can be observed for example in Hong Kong, Lithuania, Israel, Estonia, Sweden and Chile (-3.0 %, -3.3 %, -3.1 %, -3.2 %, -3.4 %, -3.7 %).

Prosecution personnel

Regarding prosecution personnel, the 10th UN-CTS used the following definition:

"Prosecution personnel" may be understood to mean a government official whose duty is to initiate and maintain criminal proceedings on behalf of the state against persons accused of committing a criminal offence. Data concerning support staff (secretaries, clerks, etc.) should be excluded.

This definition has also been used in the 6th to 9th UN-CTS waves. As with the police force, summarising information on the prosecution service in one single variable is very problematic. The problems are even bigger than on the police level, since the prosecution service is placed at a later stage of the criminal justice process. Therefore, legal differences between systems are even more remarkable here. Size and structure of the prosecution service will be subject to significant variation across countries due to the different legal tasks assigned to prosecutors:

Not all cases investigated by the police will necessarily show up on prosecution level (see Elsner, Smit, Zila 2008 and also Elsner, Lewis, Zila 2008), for example due to police competences to drop cases if no offender was found or if there was insufficient evidence. In minor cases the police in some countries can even impose or suggest some kind of sanction (e.g. a police caution). Therefore, the input that prosecutors have to face in different countries is subject to huge variation.

Apart from this, the competences of the prosecutors themselves are quite different (see Wade 2006; Wade et al. 2008). In some countries a strict principle of legality is still more or less observed, obliging prosecution officers to investigate each case until the decision can be made to present an indictment to the court or drop the case based on legal or factual reasons. In other countries, the binding to a principle of legality is less strict or even replaced by a principle of expediency, allowing the prosecution service to drop cases not only for legal or factual reasons, but also in cases of minor guilt without any sanction or dispose of cases under the condition of a certain activity to be executed by the accused voluntarily, like paying a certain sum of money or doing community work. In some countries apart from this the prosecution service in certain clear cases can even issue real sanctions that count as convictions.

In addition, efficiency and structure of the prosecution service may influence the personnel numbers as well as statistical issues like counting rules (instructive with respect to the effect of counting rules on police level Aebi 2008).

Table 2 (in the Annex) and figure 3 show the results for the prosecution personnel rates per 100,000 population. As with police rates, prosecutor rates are subject to remarkable variation. The differences are even bigger here than on police level, with rates ranging from 0.2 in Zambia to 44.9 in Colombia. In any case, in all countries the rate of prosecutors is much lower than the rate of police officers. The median is 6.1, the mean 8.0. The standard deviation is 7.9 and the distribution of values is once again positively skewed. Differently from police figures, prosecution personnel rates do not imply that there is any minimum rate of prosecutors per

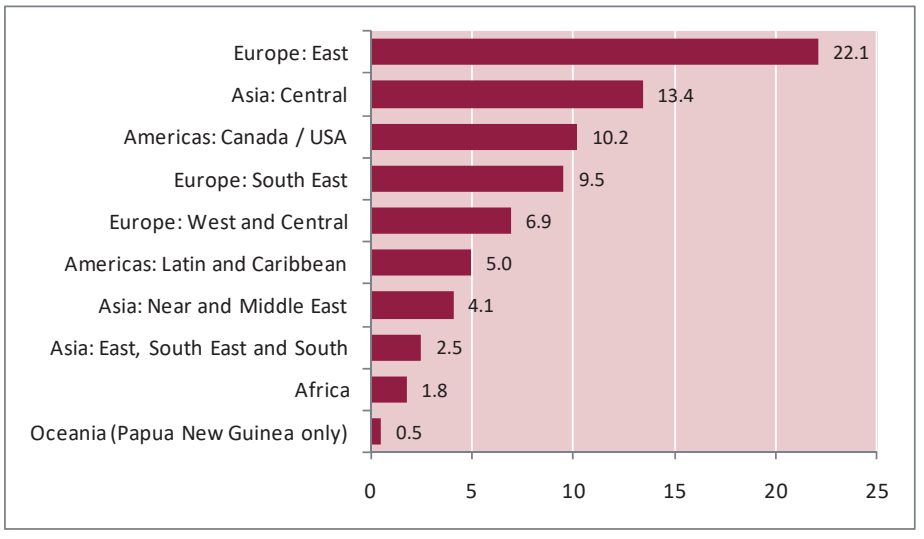
100,000 population. In quite a few countries there are less than three prosecutors per 100,000 population.

As can be seen in figure 3, there are also huge differences in regional and sub-regional medians for prosecution personnel rates. The highest rates of prosecutors can be found in Eastern Europe (median: 22.1). All countries in that area show prosecutor rates above 20 (Belarus: 20.4, Republic of Moldova: 20.1, Russian Federation: 30.3, Ukraine: 30.3). All other countries that were formerly part of the Soviet Union (even the Baltic countries) also show very high or at least fairly high prosecutor rates (between 25.2 for Lithuania and 10.8 for Azerbaijan). To a lesser extent, the same is true for the countries formerly under Socialist regimes in Central Europe, especially for Poland, Hungary and Slovakia with rates around 15. Moreover, China (13.5) and Mongolia (14.4) also support the assumption that there is a connection between (former) socialist influence and high prosecution personnel rates (similar results for earlier reference years can be found in Mayhew 2003, 89; Gruszczynska, Marshall 2008, 19).

The sub-regional medians for Central Asia and South East Europe are also quite high due to the fact that the first mentioned sub-region includes only data from countries that were formerly Soviet Republics, while the latter (except for Turkey with a rate of only 4.8) includes countries from the Balkans that were formerly socialist, too.

Regarding the Americas, there is considerable variation in prosecutor rates. Both Canada (11.6) and the USA (8.8) show prosecutor rates above the average. For Latin America and the Caribbean, the median rate is much lower (5.0). However, there are very different rates to be found in the different countries of that region, ranging from 2.2 in the Dominican Republic to 44.9 in Colombia.

Figure 3. Prosecutors per 100,000 population by regions and sub-regions (medians)



The same observation (although less extreme) can be made in Western and Central Europe, even if excluding the countries that were formerly socialist: In the remaining countries, rates range from 1.5 in Malta to 11.6 in Portugal, without any clear pattern. For example, in Scandinavia rates range from 2.0 in Norway to 11.2 in Denmark.

Clearly lower median rates can be found for the Near and Middle East (4.1), for East, South East and South Asia (2.5), for the whole of Africa (1.8) and for the only country from Oceania that was able to provide data (Papua New Guinea: 0.5). But even in these areas, there are some outliers with much higher values. For example, Egypt shows a rate of 25.4 prosecutors, which is also much higher than the rates for the other two participating North African countries (Algeria: 1.7, Morocco: 1.8).

Table 2 in the Annex also shows the trends for prosecution personnel rates over time. Differently from police personnel, the general trend shows increasing personnel rates. The median average annual change rate is 2.0 %, the mean 1.9 %, the standard deviation 3.9 percentage points. There are countries with remarkable increases up to 11.4 % per year in an eleven-year period (Malaysia). Only few countries show relevant decreases, most prominently the Dominican Republic with an annual change rate of -7.4 % during a period of 8 years.

Judges

The data collected on judges is again even more critical than the data collected on prosecutors. While the issues addressed in the prosecution section should also appear at courts level (legal and factual differences in criminal justice systems and therefore in the duties of and need for judges, efficiency and structure of the court system, differences in statistical counting rules), there is also a severe problem with the definition used:

First of all, the questionnaire asks for the number of professional judges or magistrates and defines this group of persons "to mean both full-time and part-time officials authorized to hear civil, criminal and other cases, including in appeal courts, and make dispositions in a court of law. Please include in that category associate judges and magistrates, who may be authorized as above".

The numbers reported are not restricted to judges deciding criminal cases. Therefore, this value is not at all directly related to criminal justice. It does not mean very much in this respect. The comparability problem might get even worse because some countries might still only report the number of judges whose duty is the judgment of criminal cases. Apart from this, it is not clear whether really all judges are included in the reported figures in all countries. Numbers will often only include judges at ordinary courts, but not those working at specialized courts (like administrative courts etc.).

Still, this chapter will present some main results on the rates of professional judges and magistrates in international comparison. The reader should, however, keep in mind the restrictions regarding the comparability of these figures. We will not report results on lay judges. While the UN-CTS questionnaire also includes a question regarding this group of judges, their tasks and the areas of the criminal justice process and other court hearings where laypersons are needed are so much dependent on the individual legal system of each country that values are not at all comparable.

Figure 4. Professional judges per 100,000 population (medians)

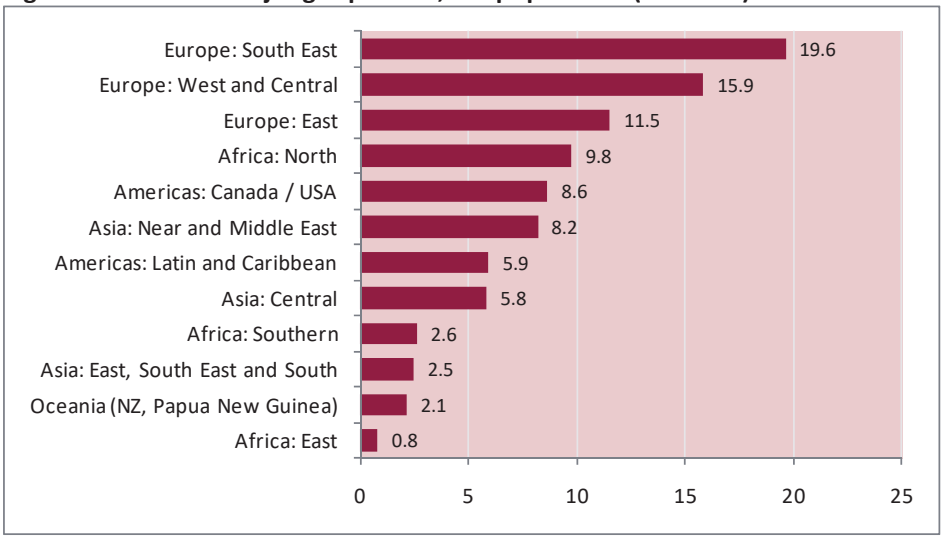


Figure 4 and table 3 (in the Annex) show the distribution of rates of professional judges across the world. There is significant variation in the rates, with a median rate of 9.7, a mean of 11.5 and a standard deviation of 9.9. Once again, skewness is positive. Rates for professional judges are as wide-ranged as are the rates for prosecutors: The lowest rate can be found in Ethiopia (0.2 judges per 100,000 population), the highest in Slovenia (50.0).

The highest rates can be found in Europe, with medians of more than 10 for all three sub-regions that were separately analyzed (West and Central, East, South East). This result is repeated even more impressively when looking at the individual country results: Among the 20 countries with the highest rates of professional judges are 19 countries from Europe, with Costa Rica being the only exception (19.6). Additionally, there are 42 countries with judges rates of 10 or more per 100,000 population, of which 33 are from Europe.

Among the top-ranking countries, there are also once again quite many countries from Central, South East and East Europe with a socialist history, although the connection is not as pronounced as it was for the prosecutors. But apart from a continental European legal tradition (for example the UK not only has a different legal tradition, but also lower rates of judges) a socialist history might explain high rates of judges. This interpretation is supported by the results for China and Mongolia, where judges rates are around 15.

The next highest rates of judges can be found in North Africa (9.8), Canada / USA (median: 8.7 with 6.5 for Canada and 10.8 for the USA) and the Near and Middle East (8.2), with quite uniform results in North Africa and USA / Canada, but quite high variation in the Near and Middle East (from 3.2 in Saudi Arabia to 16.0 in Bahrain). The results for Central Asia (5.8) and Latin America and the Caribbean (5.9) are considerably lower, although the former countries also had a socialist past. This supports the assumption that the relationship between such a history and judges rates is weaker than it is for prosecutor rates.

Low rates of professional judges can be found in East (0.8) and Southern (2.6) Africa and also in East, South East and South Asia (2.5), however with some remarkable outliers. Apart from the already named countries Mongolia and China, Zambia (9.8) is also to be mentioned here.

The trend in judges rates is overall quite comparable with the trend in prosecutors rates, showing average annual change rates of 1.8 % in the median and 2.2 % in the mean. The standard deviation is higher with 4.2 percentage points. The incredible change rate for Tajikistan of 23.7 per cent per year – leading to about ten times higher rates at the end of the eleven-year period – might of course also be due to changes in the reporting of data, i.e. not necessarily only reflect changes in the real world. However, this could not be confirmed due to the fact that the country only participated in the 6th and 10th waves. There are also some other countries with quite remarkable increases (e.g.: 7.1 % per year over an eleven-year period for Moldova) or decreases (e.g.: -7.7 % per year over an eight-year period for Malaysia; but also note the strong increase in prosecutors rates for that country [see above]).

Prison staff

The fourth section of the UN-CTS questionnaire addresses prisons / penal institutions. Apart from budget and staff variables, which are included in all sections of the UN-CTS questionnaire, the prisons section also includes questions on the number of adult and juvenile prisons and the number of available places (without overcrowding). These latter variables are not evaluated here (but see Walmsley in this publication, chapter 7, for some results on overcrowding). The sheer number of institutions means nothing with respect to resources (since this number would also depend on the number of available places per prison and is therefore not a direct indicator of the amount of resources spent). The number of places available without overcrowding is also not a measure for the extent of resources spent, because the "official capacity" of prisons is mainly subject to definition by each and every country, which does not necessarily imply a certain minimum standard and thus minimum standard costs.

In this publication, we are going to focus on the total staff in adult prisons only. The UN-CTS also asks for data on juvenile prison staff, but this data can also not be interpreted under the resources aspect. The extent to which juveniles can be sent to prison is subject to wide variation across the world. Apart from or instead of prisons, there are reformatories, borstals and other types of custodial institutions for juvenile offenders available inside or outside of criminal law. Not all of the custodial institutions would be counted under a prison staff heading (especially if not under prison administration, see definition below). Apart from this, many countries focus primarily on non-custodial responses to juvenile delinquency. The staff figure will therefore be subject to wide variation and cannot be validly interpreted without looking in detail into the different systems.

Even with respect to adult prison staff, the results have to be interpreted carefully. The staff numbers are only collected as a total (and differentiated by sex), but not differentiated by functions. Therefore, a high number of prison staff may be an outcome of a high number of custodial personnel or it might be an outcome of a high number of treatment personnel. The interpretation would be very different, depending on the distribution of the different functions within the total prison staff. With respect to custodial personnel, the necessary number might dramatically be reduced in prisons where security is mainly guaranteed by technical means and architecture (therefore, the inmate / staff ratio is

also no valid indicator for the quality of prison conditions: see Mayhew 2003, 93, although an extremely low rate might be a piece of evidence for lack of quality).

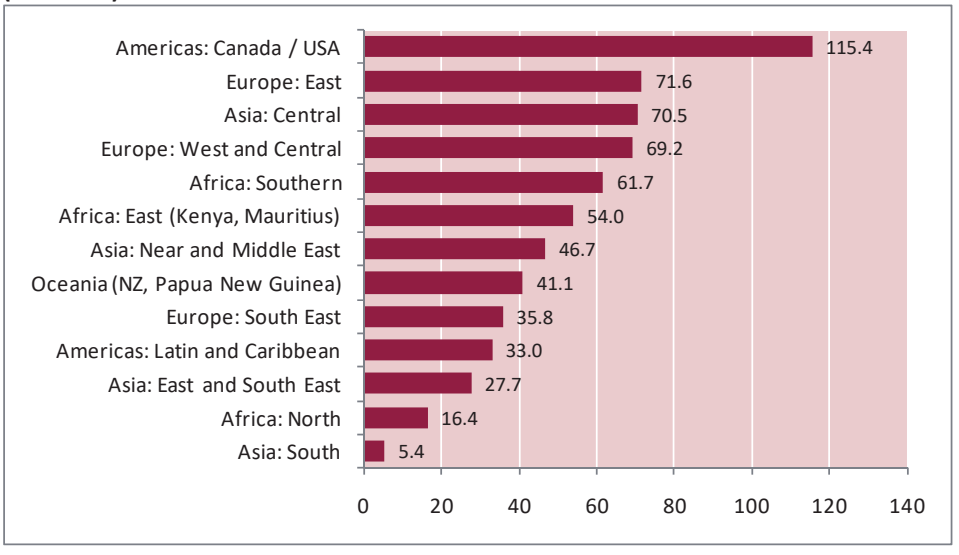
Apart from this, prison staff is highly dependent on the number of persons sent to prison. This number – in relation to the total number of persons in contact with the system and / or the number of persons convicted – is subject to wide variation, too, and it especially depends on the punitivity of the system. Therefore, one might say, personnel rates are high in countries were a high number of personnel is needed due to a high number of prisoners (although this is no general rule; see Mayhew 2003, 93). This makes the interpretation of staff numbers under a mere resources aspect questionable.

The 10th UN-CTS questionnaire defines prison staff "to mean all individuals employed in penal or correctional institutions, including management, treatment, custodial and other (maintenance, food service etc.) personnel." Prisons, penal institutions or correctional institutions are defined as "all public and privately financed institutions where persons are deprived of their liberty. The institutions may include, but are not limited to, penal, correctional, and psychiatric facilities under the prison administration." This definition is in line with the earlier editions covered here, too.

Table 4 (in the Annex) and figure 5 show the results for the total staff in adult prisons in international comparison. Once again the results are quite wide-ranged, with a minimum of 2.4 prison staff members per 100,000 population in Nepal and a maximum of 160.4 staff members in Colombia. The median is 50.7, the mean 54.4, the standard deviation 33.6. The distribution of values is once again positively skewed.

Regional and sub-regional analysis shows that the highest prison staff rates can be found in the area of Canada and the USA (median: 115.4, USA: 138.3, Canada: 92.5). Only five other areas in the world also show median prison staff rates above the overall median: East Africa (54.0), Southern Africa (61.7), Central Asia (70.5) and West and Central Europe (69.3). Clearly lower rates around 30 can be found in Latin America and the Caribbean (33.0), East and South East Asia (27.7) and South East Europe (35.8), while the lowest rates by far can be found in North Africa (16.4) and especially in South Asia (5.4).

Figure 5. Correctional staff in adult prisons per 100,000 population by regions and sub-regions (medians)



Ten of the responding countries show staff rates greater than 100 per 100,000 population, with Colombia (160.4) at the top, followed by the USA (138.3) and Latvia (127.5). Many of the countries ranking high here will do so due to high incarceration rates, as is known for example for the USA (see Mayhew 2003, 93; Gruszczynska, Marshall 2008, 27). Most of the countries ranking high, even among the "top 30", are countries from Europe and the Americas. On the other hand, at the bottom of the list, countries from Asia clearly dominate, although there are also a high proportion of countries from Latin America and the Caribbean among these countries with the lowest personnel rates. There are only six countries with rates lower than 10, five of which are from Asia, three of them more precisely from South Asia, thus explaining the very low median for that area.

Table 4 in the Annex also informs about the trends in prison staff. As with prosecution personnel and judges rates, prison staff rates have been increasing in the last years, if looking at the general trend. The median average annual change rate is 1.2 %, the mean even 1.9 %. The standard deviation is fairly high with 4.1 percentage points. Accordingly, there are some countries with very strong increases over long periods of time. For example, Jordan and the Dominican Republic show average yearly increases of more than 10 % for an eleven-year period. There are no countries with comparably strong decreases. A country with quite high decrease rates over quite a long period of time is for example Estonia with -4.2 % per year over a nine-year period, or Panama with -5.4 % per year over an eleven-year period.

Possible measures of criminal justice performance

Regarding criminal justice system performance, the indicators the UN-CTS data provide are somewhat limited. However, some brief estimates can be made by connecting data on criminal justice personnel with the data on offenders they have to deal with. This is – of course – only a restricted view on performance, not looking at the quality, but on the quantity of work done by the different actors in the criminal justice system: Quantitative productivity defined as the relation between personnel strength and the output produced (see Mayhew 2003 and Smit 2008 with comparable approaches).

The term "productivity" is used here without any judgment or quality assessment connected (for criticism of this term see Smit 2008, 108). This means: High quantitative productivity is not a measure for the overall performance of a system or for the quality of the results produced. The extent of productivity is highly dependent on the structure of a criminal justice system. Therefore, the results presented do not imply that a system with high productivity rates performs better than a system with low productivity rates.

In the resources section of this chapter, we discussed data on four different actors within the criminal justice system, namely the police, prosecution service, judges and correctional staff. In this section, we only focus on the police and prosecution service:

Judges' output cannot be validly measured due to restrictions of the definition used. Since it is not clear to what extent the judgment of criminal cases is part of the judges' duties (see above), their performance cannot be measured by the output (in convictions) they produced. Regarding prison staff, one should clearly think about the meaning of the ratio persons incarcerated per prison staff member, because incarceration is not the product of prison staff members. Since the distribution of functions among prison staff is not clear, this rate can also not be interpreted as a support or attendance rate (see above, and also Mayhew 2003, 93, who tested this). Neither can it be interpreted as a security rate, especially when taking into account the other, technical and architectural means of achieving security, which are not reflected in staff rates.

For the police and prosecution services there are also many problems connected with this kind of measurement. These problems will be addressed in detail within the relevant subsections. However, as a general remark, it should be noted that the structure of the criminal justice process should be taken into consideration when measuring the productivity of a system. Therefore, police productivity can be measured by the number of suspects they "produced", but not by the number of prosecutions or convictions that resulted afterwards. This is due to the fact that at least under usual circumstances the police have no powers to prosecute cases in their own competence or present them in court (see Elsner, Smit, Zila 2008; Elsner, Lewis, Zila 2008). Therefore, the products "persons prosecuted" and "persons convicted" are not produced by the police.

Both of these are, however, usually produced by the prosecution service. This is also the case for convictions, although these fall primarily under the duties of judges. But the prosecutor will have to present the case in court, thus making the resulting convictions his or her product, too (see Wade, Smit, Aubusson de Cavarlay 2008 on the influence of prosecutors on the decisions of criminal courts). The same would be true for the number of persons brought before the criminal courts. This product, that is located at an intermediate stage between persons prosecuted and persons convicted, is also usually produced by the prosecution service.

Persons suspected per police officer

Starting from these initial thoughts, a first performance indicator would be the number of suspects produced per police officer. This relationship is visualized in figure 6; the connected rates can be found in table 5 in the Annex. Please note that the figure uses logarithmic scales for both values, due to large variance in the respective rates. The diagram also does not start with 1, but with 50 for both variables, due to the fact that lower values do not occur[1], and in order to allow looking at the distribution of countries in more detail. The same has been done with the other figures in this section, which also use logarithmic scales and have sometimes been trimmed, too.

As can clearly be seen from the figure, country values do not suggest a simple linear relationship between police personnel rates and the rate of suspects produced (see also Mayhew 2003, 104). The assumption that more police officers will also produce a higher output must therefore be rejected. This is at least the case with respect to UN-CTS data with all of its methodological problems, some of which have already been addressed above. Especially, suspects are not the only product of the police, which have not only repressive, but also preventive functions. One of different other products of the police is therefore security. This part of police performance cannot, however, be measured in terms of suspects. Depending on the relationship of preventive and repressive functions of the police personnel of any given country, the importance of the repressive product of "suspects produced" might vary.

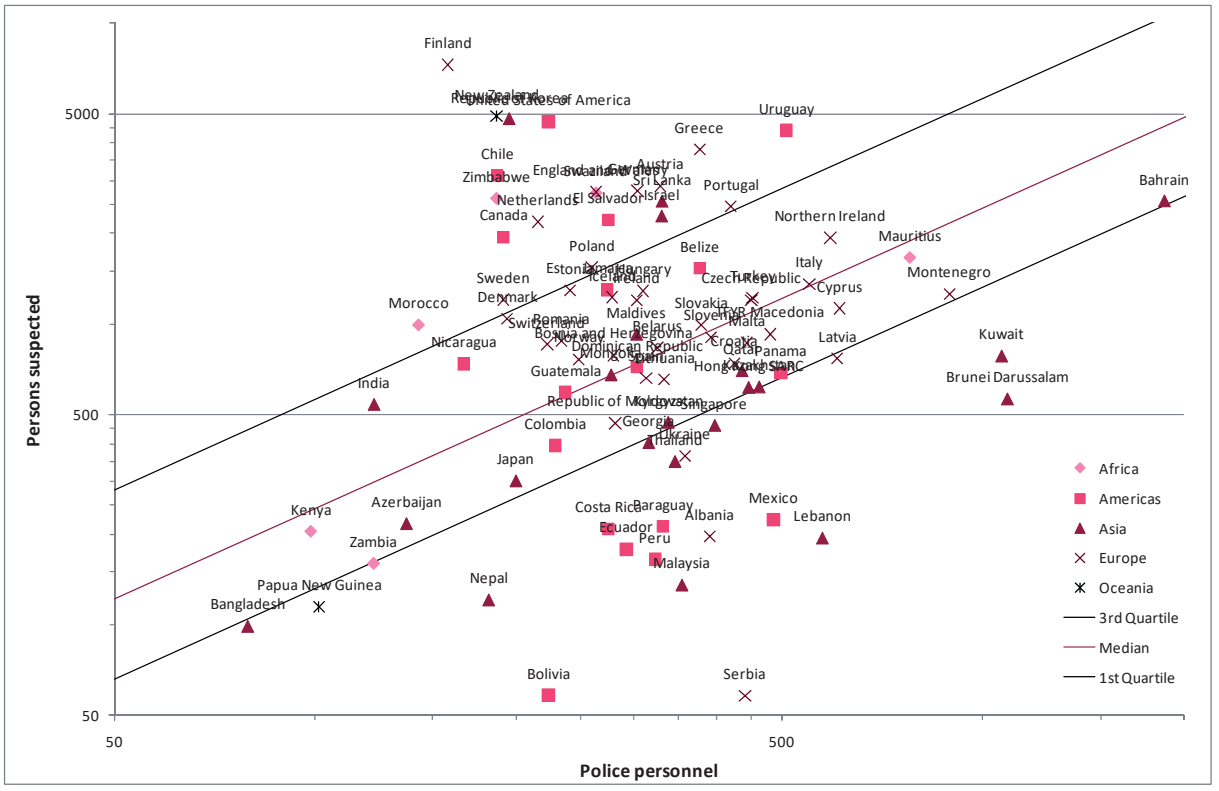
Of course, the number of police-recorded suspects also depends on the definition of "suspect" and other issues of criminal law (especially the definition of what is considered a "criminal" offence), criminal procedure law (defining the fields of investigative work to be done by police officers, in some countries excluding certain offence types, like tax offences, from their responsibility) and rules of statistical recording.

The number of suspects as a system produced value is also less dependent on the population size than is the number of police officers. While in the beginning of this chapter we showed that there is a very strong correlation between the size of the police force and the population size (corr. 0.93, R^2 0.87), the correlation between the absolute total number of suspects and the population size is much weaker (corr. 0.59, R^2: 0.35).

In accordance with the distribution shown in figure 6, there is no correlation between the rate of suspects and the rate of police officers in a country (corr. 0.02). As figure 6 indicates, there is also no clear relationship between police productivity and the region a country is located in. But it can be seen that those countries ranking lowest on the police productivity scale are mostly from Latin America and Asia (countries below the 1st Quartile). Although there is no linear relationship between the suspects rate and the rate of police officers, there seems to exist one clear centre in the figure.

[1] With one exception: The Syrian Arab Republic has been excluded from this diagram due to an unrealistically low police personnel rate of only about 10 (see above).

Figure 6. Suspects per police officer by countries and regions (log. scales)



The rate of suspects per police officer can be seen in table 5, below. As is visualized there and also in figure 6, the productivity of the police measured this way is subject to remarkable variation, with a median of 2.4, a mean of 5.2 and a standard deviation of 8.0. The minimum is 0.1 for Serbia, the maximum 46.0 for Finland. The distribution is positively skewed.

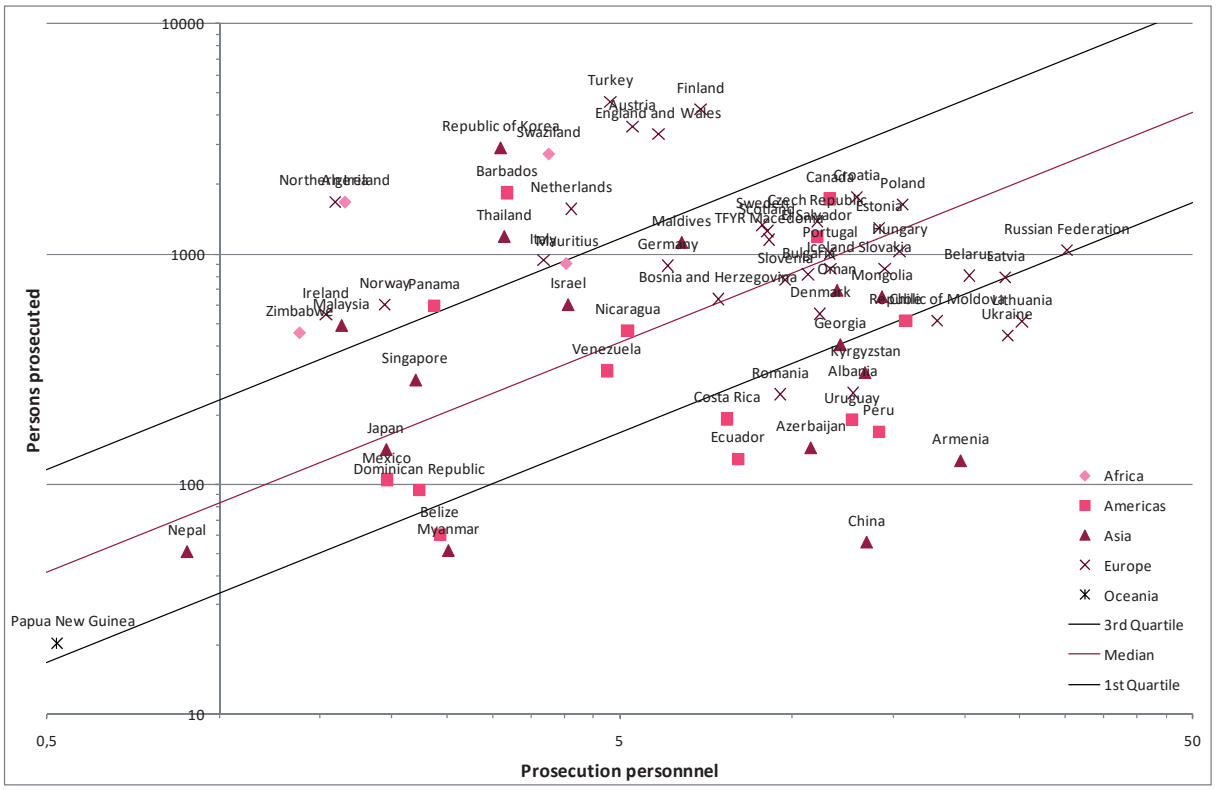
Persons suspected per police officer

A second product we are going to have a detailed look at is the number of prosecutions per prosecutor. This relation is made visible in figure 7. The calculated rates can be found in table 5 in the Annex. As with the suspects per police officer, the rate of persons prosecuted per prosecutor is subject to wild variation (a result already found by Mayhew 2003, 106, and Smit 2008, 105). The median is 82.6 persons prosecuted, the mean 194.0 and the standard deviation 262.3. Again, we find a positively skewed distribution. The minimum is 4.1 for China, the maximum 1057.9 for Northern Ireland.

As with the suspects per police officer rates, these values do not mean very much if compared directly between countries. Once again this is due to the differences between criminal justice systems, influencing prosecution input and output (see above). Apart from this, as always, differences in statistical recording have to be taken into account. In addition, there is a problem related to the definition used for "persons prosecuted" in the UN-CTS questionnaire:

"'Persons prosecuted' may be understood to mean alleged offenders prosecuted by means of an official charge, initiated by the public prosecutor or the law enforcement agency responsible for prosecution."

Figure 7. Persons prosecuted per prosecutor by countries and regions (log. scales)



"Official charge" in this respect might be a misleading term, because some might understand this to mean all persons officially prosecuted, while others might understand persons indicted.[2]

Like the ratio between suspects and police officers, the ratio between persons prosecuted and the number of prosecutors is not even close to being a constant. There is no linear relationship between these two values at all (corr. -0.12). There is also once again no clear relationship between the region in which a country is located and the quantitative productivity of the prosecution service, although the countries with a ratio below the 1st Quartile are often from Asia or Latin America. Apart from these areas, also some countries from Europe can be found here. Many of the countries from Asia and all from Europe below the 1st Quartile are countries with a socialist past, i.e. also countries with a relatively high rate of prosecutors. This leads to the assumption that the tasks of prosecutors in these countries might be broader than the tasks in other countries, thus reducing the quantitative productivity as measured by the number of persons prosecuted per prosecutor.

If there was any relationship between the personnel rates and the rates of persons prosecuted, figure 7 would point at a negative slope rather than a positive one, a result which is also denoted by the (though extremely weak and not significant) negative correlation. This result would make clear that the ratio between persons prosecuted and the number of personnel can by no means be a measure of the quality of performance. Different ratios can be explained by differences in the respective criminal justice systems.

[2] These ambiguities could be avoided. The European Sourcebook, for example, differentiates, inter alia, between a headline category *"Output cases total",* which is defined as: *"All disposals made by the prosecuting authority in the reference year,"* and a subcategory *"Cases brought before a court (e.g. indictment, acte d'accusation, Anklageschrift),"* (see Aebi et al. 2010).

Earlier publications by Mayhew (2003, 106) and Smit (2008, 109) could show for Europe and North America that there was a negative correlation between the rate of persons prosecuted (which could be interpreted as the workload) and the ratio between the convictions rate and that number: -0.56 and -0.47, respectively. This was interpreted to provide some support for the findings of Jehle (2000) according to which a lower workload of the prosecution service correlates with a higher proportion of cases brought before a court. Data analyzed for this chapter, for the first time now on a world-wide scale, displayed a much weaker correlation (corr. -0.18). Even if one restricts the analysis to Europe and Canada (no data available for the USA), the correlation is still low, only -0.22 for the latest available year.

Persons brought before a court per prosecutor

Although defined as an input value at court level in the UN-CTS questionnaire, the rate of persons brought before a court could be interpreted as an output by the public prosecution service, since this is the public body in charge of bringing cases before the court in most countries. The results for this variable in relation to the prosecution personnel variable are, however, equally problematic as the results for persons prosecuted (discussed above). Once again, the rates differ very much: The median is 85.5 cases brought before a court per prosecutor, the mean is 201.2, the standard deviation 266.2. The minimum rate is 3.6 for Ecuador, the maximum 1057.9 for Northern Ireland. The ratio between persons brought before a court and the number of prosecutors is therefore not even close to being a constant. There is no linear relationship between these two values (corr. -0.08).

The distribution is quite similar to the distribution that can be found for persons prosecuted per prosecutor. This can also be confirmed by checking for the correlation between the rate of persons prosecuted and the rate of persons brought before a court (corr. 0.87, R^2 0.75). Additionally, the ratio of persons brought before a court per persons prosecuted is exactly 1 in the median, the mean being 1.28. However, the interpretation of both variables seems to be quite different across countries, since the minimum is a bit over 0.2 for Japan (i.e. about 4 to 5 persons brought before court per 1 person prosecuted), the maximum 5.8 for the Republic of Korea. The standard deviation is, accordingly, 1.0.

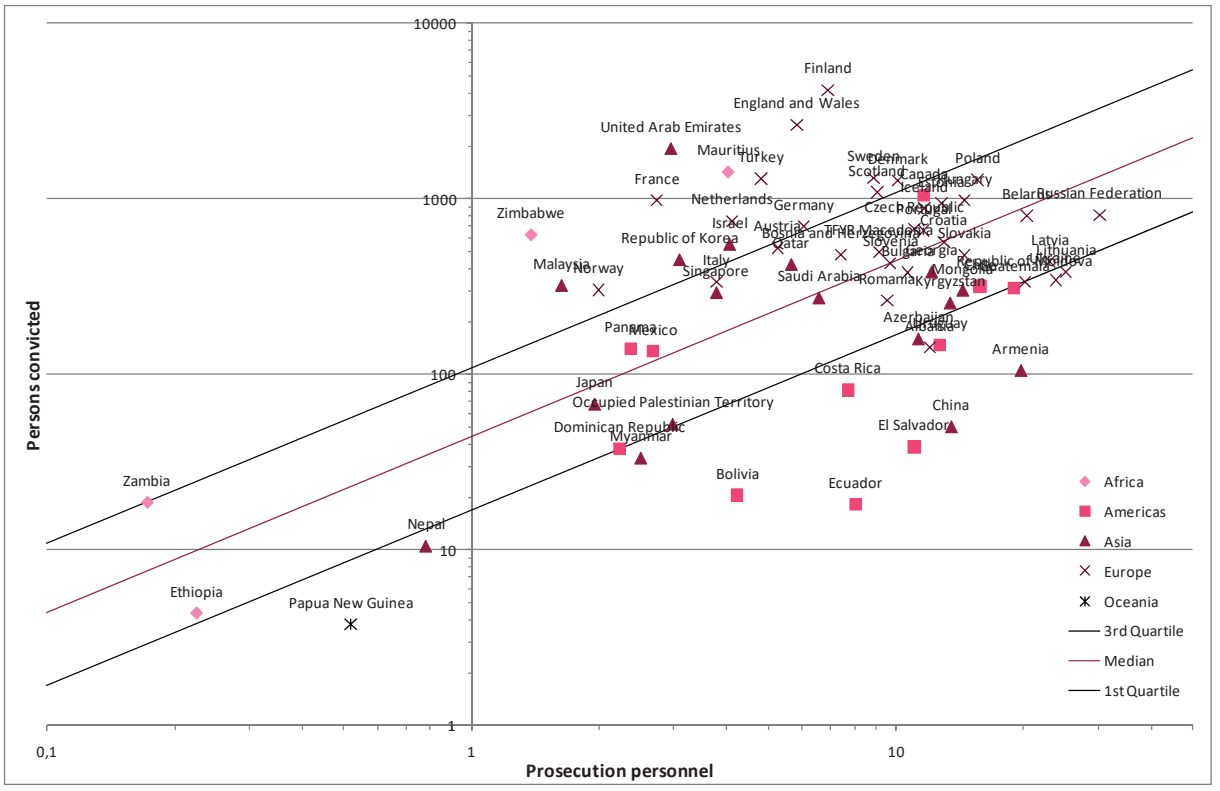
Apart from differences in the criminal justice systems, these results reflect problems related to the quality and the comprehensibility of these definitions. The majority of respondents, however, tend to understand both variables almost synonymously. Therefore, the ratio of persons brought before a court per prosecutor is not analyzed more closely here.

Persons convicted per prosecutor

A final "productivity" indicator introduced here is the ratio between persons convicted and the number of prosecutors. The results for this relation can be seen in figure 8 and table 5 (in the Annex).

As with the other ratios already discussed, this final ratio shows once again pronounced differences (see also the earlier results by Mayhew 2003, 107). The median is 44.3 convictions per prosecutor, the mean 97.1, the standard deviation 138.6. With a minimum of 2.3 (Ecuador) and a maximum of 654.9 (United Arab Emirates), the maximum is once again much higher than the minimum. The distribution is positively skewed.

Figure 8. Persons convicted per prosecutor by countries and regions (log. scales)



As was already shown for the other performance indicators, it can be clearly seen in figure 8 that there is also no linear relationship between prosecution personnel rates and conviction rates (corr. 0.02). However, the relationship between quantitative productivity and the region a country is located in seems to be more pronounced: While below the 1st Quartile almost all countries are located in Asia, Latin America and the Caribbean, above the 3rd Quartile most countries are located in Europe. Apart from these, three out of four represented countries from Africa can be found here. There are also a number of Asian countries in the highest-ranking quartile.

Of course, as for the other variables discussed here, once again comparability issues have to be taken into account, based on the differences of the criminal justice systems and of statistical recording. At least, the variable of "persons convicted" is less ambiguous than other variables discussed here, especially the "persons prosecuted" variable.

The definition used by the UN-CTS was: "'Persons convicted' may be understood to mean persons found guilty by any legal body duly authorized to pronounce them convicted under national law, whether the conviction was later upheld or not."

However, since the conviction is located at the end of the criminal justice process of first instance, the differences of the legal systems are fully pronounced here. Rates are, for example, influenced by the percentage of cases that are subject to diversion and thus not or only informally sanctioned (for details on attrition within the criminal justice process see Smit and Harrendorf in this book, chapter 5).

Combining the measures

So far, we presented four different indicators of quantitative productivity of criminal justice systems. One of these measures (persons brought before the court per prosecutor) was rejected due to the close interrelation with and dubious connection to the ratio of person prosecuted per prosecutor. For the remaining three ratios, we calculated correlations. The results are 0.45 for suspects ratio by persons prosecuted ratio, 0.65 for suspects ratio by persons convicted ratio and 0.66 for persons prosecuted ratio by persons convicted ratio. Therefore, systems with a high quantitative productivity with respect to one of these

measures also tend to have a high quantitative productivity with respect to the other two measures. Although one has got to keep in mind that quantitative productivity is not a measure of overall criminal justice performance, especially not a measure for quality, this relationship makes is nevertheless possible to think about a combined productivity measure, based on all three ratios.

Such a productivity measure was calculated. In order to do so, the distribution of all three ratios was standardized to the range 0 to 1. Afterwards, where all three measures were available for a country, these were added together and the result was divided by three. If only two measures were available, these were added and divided by two, and if there was only one measure, this was used (in the standardized version, of course). The results can be seen in table 5 in the Annex (CPM column).

Table 5 also shows the separate ratios (non-standardized) that were used to calculate the index. For these ratios, the table also features average annual change rates and information on the trend length, where available.

Punitivity of the system

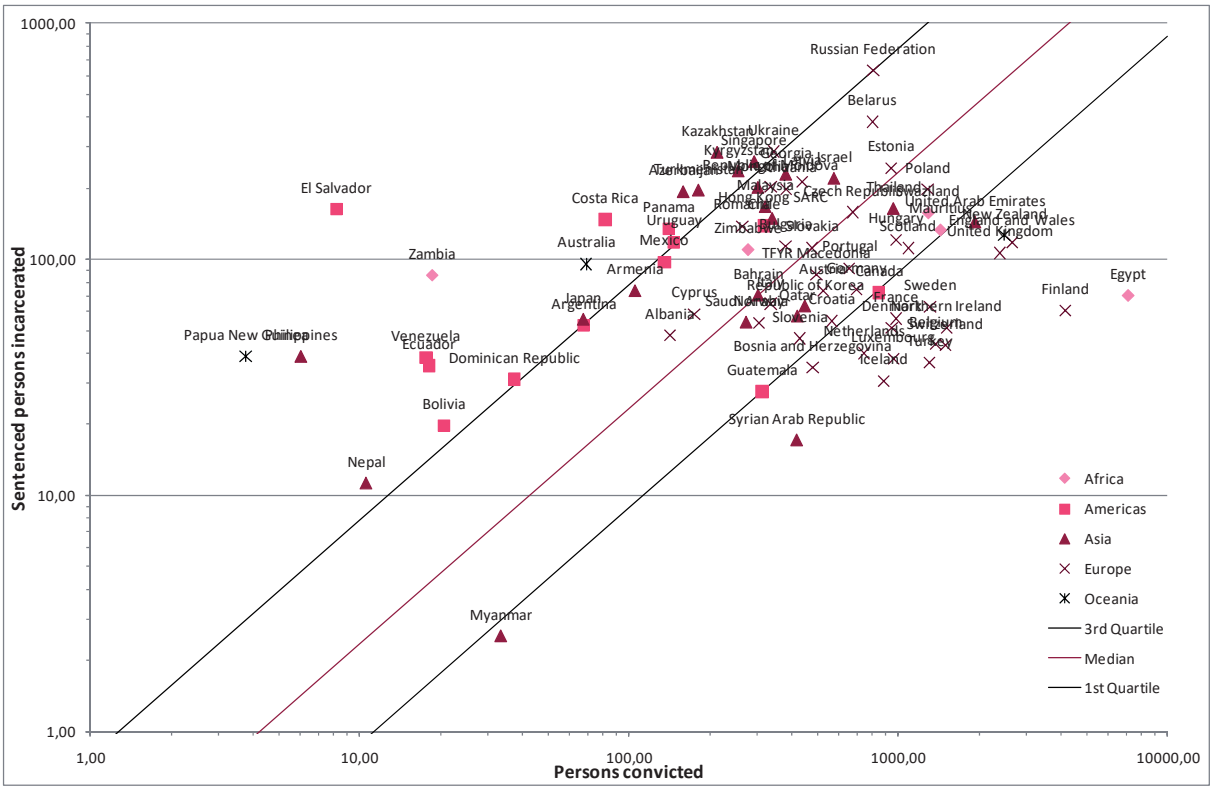
Punitivity is an ambiguous term that requires definition. One might understand punitivity to mean an attitude within the population, a measure for the demand for harsh punishment. This type of punitivity cannot be measured with UN-CTS data. However, punitivity can also be understood to mean a feature of the criminal justice system itself, e.g. measuring the harshness of sentences (juridical punitivity; see Kury, Ferdinand 2008). Punitivity with respect to the UN-CTS can only be understood in this latter way. Therefore, punitivity is regarded here as an attribute of any given criminal justice system, measuring the severity of the response to criminal offending.

UN-CTS data does not cover information on sentences imposed for survey waves after the 7th anymore. Therefore, the length and severity of sentences cannot be directly calculated with UN-CTS data. However, there is another possible approach: The UN-CTS still covers information on the number of sentenced persons incarcerated. It also includes data on the total number of convictions. Systemic punitivity can now be estimated by the ratio between the rate of sentenced persons incarcerated and the rate of persons convicted (see Smit 2009):

The number of sentenced persons in prison at any given date is influenced 1) by the number of persons sent to prison and 2) by the actual lengths of prison sentences served. The ratio between sentenced persons incarcerated and the total of persons convicted is, however, only an estimate for systemic punitivity due to the fact that 1) counting units do not exactly fit and 2) the persons actually in prison at a given date in the reference year have been sent there before. They might have already been in prison for a longer period of time. Therefore, the estimate calculated this way is not robust against changes in the degree of systemic punitivity over time.

Taking all this into account, we calculated punitivity ratios (see table 6). Additionally, figure 9 visualizes the connection between the rates of sentenced persons incarcerated and the rate of persons convicted.

Figure 9. Sentenced persons incarcerated per persons convicted by countries and regions (log. scales)



There is remarkable variation in the results produced this way. As table 6 shows, the median ratio is 0.23, the mean 0.92. The standard deviation is 2.56 with a minimum of 0.01 for Finland and Egypt and a maximum of 19.83 for El Salvador. The distribution is – again – positively skewed. The results for countries ranking extremely high for this ratio should, however, be interpreted with care: Results much above 1 need justification and explanation. Such results are possible if the input into prison is continuously higher than the output (in the meaning of released persons) and the rate of unsuspended prison sentences per total convictions and the average sentence lengths are high. However, extremely high rates are likely to invite some other explanations: For example, the "top six" countries in table 6 (in the Annex) all show extremely low conviction rates. This combined with the higher incarceration rates leads to the assumption that these countries do not report all of their convictions, but only a small part of them, in the UN-CTS.

As figure 9 shows, most of the countries ranking lowest for the punitivity ratio are located in Europe, while most high-ranking countries can be found in Asia, Latin America and the Caribbean.

Since the punitivity ratio calculated here gives only an estimate of the "real" punitivity of a system, it is useful to test its quality against other measures of punitivity. One other measure of punitivity of the system is the rate of harsh sanctions among all sanctions imposed, namely the percentage of longer unsuspended prison sentences within the total of convictions for a certain offence or for all convictions.

Based on the approach chosen, there are different advantages and problems connected: If one wants to measure the punitivity of the whole system, one might think the best solution would be to calculate the above mentioned percentage for all convictions, regardless of offence type. However, there are certain problems regarding this solution. The term "total convictions" is a black box with respect to offences covered. This is due to the fact that the borderline between criminal and non-criminal behaviour is drawn somewhat differently in every country. Apart from this, convictions stand at the end of the criminal justice process. Therefore, depending on the system, a larger or smaller quantity of (especially: minor) offences might have dropped out of the criminal justice process without any conviction at all, e.g. due to diversion etc. A low percentage of long prison sentences might also

be due to an extensive criminal justice system in which even minor cases lead to a conviction.

One solution might be to refer to a certain, known offence that is well-defined and more or less comparable instead (like theft). This would help to calibrate the punitivity measure to a certain offence severity. However, still huge problems remain if looking at such a minor offence: A varying percentage of cases will never reach the convictions level, but will be dropped, diverted or disposed of at earlier stages.

However, it would be short-sighted to draw the conclusion that one should look instead at more severe, well-defined offences (like robbery). Of course, for these offences the attrition rate will be lower in all countries than for minor offences. However, another problem will arise: The severity of sanctions for grave offences will not necessarily represent overall severity of the criminal justice response. Long sentences for, e.g., robbery might also be due to severe punishment of this special crime type, and only this. Apart from this, with increasing severity of the offence the punishment will increase everywhere. Since there is an upper limiting value for sentence severity, this will lead to decreasing variation in the distribution of sentences with increasing gravity of the offence.

Due to these restrictions, we used a combined approach in table 6 in the Annex, calculating the percentage of unsuspended prison sentences of more than one year in the total of convictions, the percentage of sentences above two years in robbery convictions and the percentage of sentences longer than one year in theft convictions. The rates were calculated using the raw data of the European Sourcebook of Crime and Criminal Justice Statistics for the reference year 2006 (Aebi et al. 2010).

Apart from these measures of punitivity of the system, we also introduced a measure of punitivity of the general public into table 6: The percentage of the general public opting for imprisonment as punishment for a recidivist burglar in 2004 / 2005 (taken from van Dijk, van Kesteren, Smit 2007, 149).

Table 1. Correlations and R^2 for punitivity measures

Correlations			
incarceration / public opinion	incarceration / long sentences total	incarceration / long robbery sentences	incarceration / long theft sentences
0.20	0.92	0.46	0.89
public opinion / long sentences total	public opinion / long robbery sentences	public opinion / long theft sentences	
-0.03	0.39	-0.01	
long sentences total / long robbery sentences	long sentences total / long theft sentences		
0.53	0.88		
long robbery / long theft sentences			
0.70			
R^2			
incarceration / public opinion	incarceration / long sentences total	incarceration / long robbery sentences	incarceration / long theft sentences
0.04	0.85	0.21	0.78
public opinion / long sentences total	public opinion / long robbery sentences	public opinion / long theft sentences	
0.00	0.15	0.00	
long sentences total / long robbery sentences	long sentences total / long theft sentences		
0.28	0.77		
long robbery / long theft sentences			
0.49			

Correlations and R^2 between each pair of these measures are shown in table 1. As can be seen there, all measures of systemic punitivity are highly correlated. There is a 0.92 correlation between the rate of sentenced persons incarcerated per total convictions and the percentage of sentences longer than one year in all convictions. The punitivity measure calculated with UN-CTS data is also very strongly correlated with the percentage of unsuspended theft sentences over one year in the total of theft convictions (corr. 0.89). As could be expected, based on the theoretical thoughts presented above, the correlation with long robbery sentences above two years is weaker, though not irrelevant (0.46).

The correlation with the measure for the punitivity of the general public, on the other hand, is only 0.20. This supports the assumption that public punitivity and punitivity of the system are two different issues that have to be addressed separately (although there might be a weak relationship between them, as was also found in van Dijk, van Kesteren, Smit 2007, 151). This hypothesis is also supported by the fact that most other measures for the punitivity of the system used in table 6 (in the Annex) are not correlated with the public opinion variable. According to the results presented in table 1, this is the case for long sentences total (corr. -0.03) and long theft sentences (corr. -0.01). Only the punishment for more severe offences seems to be more strongly influenced by public opinion (or in any other way interrelated): Here we can find a correlation of 0.39. These findings support other research results that show that the interrelations between public opinion, lawmaking and legal practice are complex (see i.a. Green 2008; Theodore, Kury 2008; Kury, Ferdinand, Obergfell-Fuchs 2008).

Summary and conclusions

This chapter focused on three different attributes of criminal justice systems all over the world, namely resources, performance (productivity) and punitivity.

Resources

Regarding criminal justice resources, four personnel variables provided in the UN-CTS data were analyzed: police personnel, prosecution personnel, professional judges and staff in adult prisons.

With respect to police personnel, the following main results were found: Absolute police personnel figures are quite clearly dependent on the population size (corr. 0.93). Police personnel rates per 100,000 population vary significantly between countries. The median is 303.3, the mean 341.8, the standard deviation 241.5. The distribution is positively skewed. Results imply that there is a minimum number of police officers per 100,000 population that is necessary in any country. Only four countries worldwide show police personnel values lower than 100 officers per 100,000 population. There are two regions in the world with relatively high median rates of police personnel (around 400), the Near and Middle East as well as East and South East Europe, while the regions with the lowest median rates (median around 200) can be found in Africa, Canada / USA, South Asia and Oceania. Police personnel figures were quite stable across the reference period (1995 – 2006). The mean and median of the change rates per year are around 0 % (standard deviation 2.45 percentage points).

For prosecution personnel, we observed that rates vary remarkably, ranging from 0.2 to 44.9. In all countries the rate of prosecutors is much lower than the rate of police officers. The median is 6.1, the mean 8.0. The standard deviation is 7.9, and the distribution of values is positively skewed. The highest rates of prosecution personnel can be found in Eastern Europe (above 20). All other countries that were formerly part of the Soviet Union also show high prosecutor rates (between 25.2 and 10.8). To a lesser extent, the same is true for the countries formerly under socialist regimes in Central Europe. Moreover, results for China and Mongolia also support the assumption that there is a connection between (former) socialist influence and high prosecution personnel rates. Regarding the Americas, there is considerable variation in prosecutor rates. Both Canada (11.6) and the USA (8.8) show prosecutor rates above the average. For Latin America and the Caribbean, the median rate is much lower (5.0). However, rates range from 2.2 to 44.9. A similar observation can be made in Western and Central Europe (excluding formerly socialist countries): Rates

range from 1.5 to 11.6 without any clear pattern. Clearly lower median rates can be found for the Near and Middle East (4.1), for East, South East and South Asia (2.5), for the whole of Africa (1.8) and for Papua New Guinea (0.5). But once again there are outliers with much higher values. The general trend shows increasing prosecution personnel rates. The median average annual change rate is 2.0 %, the mean 1.9 %, the standard deviation 3.9 percentage points. There are countries with remarkable increases of up to 11.4 % per year in an eleven-year period, and only few countries show relevant decreases.

As regards professional judges, there is significant variation with a median rate of 9.7, a mean of 11.5 and a standard deviation of 9.9. Rates range from 0.2 to 50.00. The highest rates of judges can be found in Europe, with medians of more than 10 for all three sub-regions that were separately analyzed (West and Central, East, South East). Among the 20 countries with the highest rates of professional judges are 19 countries from Europe with Costa Rica being the only exception (19.6). The lowest median rates of professional judges can be found in East (0.8) and Southern (2.6) Africa and also in East, South East and South Asia (2.5), however with some remarkable outliers (Mongolia and China with rates around 15 and Zambia with about 10). Trends in judges rates are overall quite comparable with trends in prosecutors rates, showing average annual change rates of 1.8 % in the median and 2.2 % in the mean with a standard deviation of 4.2 percentage points.

The results for staff rates in adult prisons are quite wide-ranged once again with a minimum of 2.4 prison staff members per 100,000 population and a maximum of 160.4 staff members. The median is 50.7, the mean 54.4, the standard deviation 33.6. Regional analysis shows that the highest prison staff rates can be found in the area of Canada and the USA (median: 115.4), while the lowest rates by far can be found in North Africa (16.4) and especially in South Asia (5.4). Ten of the responding countries show staff rates greater than 100. Many of the countries ranking high here will do so due to high incarceration rates, although this is not necessarily the case. Most of the countries ranking high are countries from Europe and the Americas. On the other hand, among the countries with the lowest rates, countries from Asia clearly dominate. Prison staff rates have been increasing in the last years, if looking at the general trend. The median average annual change rate is 1.2 %, the mean 1.9 %, the standard deviation 4.1 percentage points. Accordingly, there are some countries with very strong increases (more than 10 % per year) over long periods of time. There are no countries with comparably strong decreases.

Productivity

Regarding criminal justice system performance, the indicators the UN-CTS data provide are somewhat limited. Estimates can be made by connecting data on criminal justice personnel with the data on offenders they have to deal with: Quantitative productivity defined as the relation between personnel strength and the output produced. In this section, we focused on the police and prosecution service, looking at the "products" persons suspected per police officer, persons prosecuted per prosecutor, persons brought before the court per prosecutor and persons convicted per prosecutor.

Regarding the ratio persons suspected per police officer, it should be noted that there is no linear relationship between police personnel rates and the rate of suspects produced (corr. 0.02). More police officers will not necessarily produce a higher output. There is also no clear relationship between police productivity and the region a country is located in, although countries ranking lowest on the police productivity scale are mostly from Latin America and Asia. The number of suspects as a system produced value is also less dependent on the population size than is the number of police officers (corr. 0.59). As a result, the ratio of suspects per police officer is subject to remarkable variation, with a median of 2.4, a mean of 5.2 and a standard deviation of 8.0. The minimum is 0.1, the maximum 46.0.

The rate of persons prosecuted per prosecutor is varying strongly, too: The median is 82.6 persons prosecuted, the mean 194.0 and the standard deviation 262.3. The minimum is 4.1, the maximum 1057.9. As with the suspects per police officer rates, these values do not mean very much if compared directly across countries. Once again this is due to the differences between criminal justice systems and differences in statistical recording. In addition, the definition used for persons prosecuted in the UN-CTS is ambiguous, because official charge might be understood to mean all persons officially prosecuted, but might also alternatively be understood to mean persons indicted. Accordingly, there is no linear relationship between the number of persons

prosecuted and the number of prosecution personnel (corr. -0.12). There is also once again no clear relationship between the region in which a country is located and the quantitative productivity of the prosecution service. However, many of the countries from Asia and all from Europe below the 1st Quartile are countries with a socialist past, i.e. also countries with a relatively high rate of prosecutors. Tasks of prosecutors in these countries might be broader, thus reducing the quantitative productivity.

The distribution of the ratio of persons brought before a court per prosecutor ratios is quite similar to the distribution that can be found for persons prosecuted per prosecutor as regards mean, median, standard deviation, minimum and maximum. The correlation between the rate of persons prosecuted and the rate of persons brought before a court is 0.87. Additionally, the test ratio of persons brought before a court per persons prosecuted is exactly 1 in the median, the mean is 1.3. However, the interpretation of both variables seems to differ across countries. These results indicate problems related to the quality and the comprehensibility of these definitions, although the majority of respondents seem to understand both variables almost synonymously.

For the ratio of persons convicted per prosecutor, pronounced differences can once again be found, with a median of 44.3 convictions per prosecutor, a mean of 97.1 and a standard deviation of 138.6. Accordingly, the distribution is wide-ranged with a minimum of 2.3 and a maximum of 654.9. There is also no linear relationship between prosecution personnel rates and conviction rates (corr. 0.02). However, the relationship between quantitative productivity and the region a country is located in seems to be more pronounced: While below the 1st Quartile almost all countries are located in Asia, Latin America and the Caribbean, above the 3rd Quartile most countries are located in Europe.

The interrelation of the three ratios persons suspected per police officer, persons prosecuted per prosecutor and persons convicted per prosecutor was analyzed, too. Correlations are 0.45 for suspects ratio by persons prosecuted ratio, 0.65 for suspects ratio by persons convicted ratio and 0.66 for persons prosecuted ratio by persons convicted ratio. Therefore, systems with a high quantitative productivity with respect to one of these measures also tend to have a high quantitative productivity with respect to the other two measures. We calculated a combined productivity measure based on these three ratios (see table 5 in the Annex). This is, however, still a measure for quantitative productivity, not for quality of the output or work of a criminal justice system.

As regards the overall performance of criminal justice systems in international perspective, UN-CTS data is not able to provide a valid answer. Such an overall assessment would necessarily mean an in-depth look at the criminal justice systems of the different countries in theory and practice. And even with sufficient knowledge on all criminal justice systems of the world it would be a very ambitious task to translate this knowledge into a handy performance index, allowing for a ranking of countries based on the quality of criminal justice performance.

Punitivity

Finally, this chapter focused on the punitivity of the system in the meaning of the severity of the response to criminal offending. Systemic punitivity was estimated by the ratio between the rate of sentenced persons incarcerated and the rate of persons convicted. Punitivity ratios were calculated, with remarkable variation in the results produced this way. The median ratio is 0.23, the mean 0.92. The standard deviation is 2.56 with a minimum of 0.01 and a maximum of 19.83. The results for countries ranking extremely high for this ratio need, however, be interpreted with care: Results much above 1 need justification and explanation.

Most of the countries ranking lowest for the punitivity ratio are located in Europe, while most high-ranking countries can be found in Asia, Latin America and the Caribbean. Since the punitivity ratio calculated here gives only an estimate of the "real" punitivity of a system, its quality was tested against other measures of punitivity, taken from the European Sourcebook of Crime and Criminal Justice Statistics (Aebi et al. 2010) and from EU ICS and ICVS data (taken from: van Dijk, van Kesteren, Smit 2007, 149). Results show that we have a good measure of systemic punitivity that is highly correlated with punitivity measures taken from the ESB, especially the percentage of sentences longer than one year in all convictions (corr. 0.92) and the percentage of unsuspended theft sentences over one year in the total of theft convictions (corr. 0.89). The correlation with long robbery sentences above two years is weaker, though not

irrelevant (0.46). There is only a weak interrelation with the punitivity of the general public, as measured by ICVS and EU ICS data (corr. 0.20). Two out of three systemic punitivity measures taken from the ESB are also not correlated with public opinion, long sentences total (corr. -0.03) and long theft sentences (corr. -0.01). Only the punishment for more severe offences seems to be more strongly connected with public opinion (corr. 0.39 for long robbery sentences).

These findings support other research results that show that the interrelations between public opinion, lawmaking and legal practice with respect to punitivity are complex (Green 2008).

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Annex A to chapter 6: Tables

Table 1. Police officers per 100,000 population by country

Country	Region	Sub-region	Latest available	Year	Trend start	Year	Average annual change rate	Trend length in years
Albania	Europe	Southeast	389.7	2002	492.9	1997	-4.6%	5
Australia	Oceania	…	222.7	2004	204.5	1995	1.0%	9
Austria	Europe	West & Central	328.6	2006	311.2	2001	1.1%	5
Azerbaijan	Asia	Central	137.0	2006	138.7	2005	…	…
Bahrain	Asia	Near and Middle East	1866.7	2004	…	…	…	…
Bangladesh	Asia	South	79.2	2006	…	…	…	…
Barbados	Americas	Latin	548.0	2000	521.7	1998	…	…
Belarus	Europe	East	325.5	2004	…	…	…	…
Belgium	Europe	West & Central	357.1	2004	353.8	1995	0.1%	9
Belize	Americas	Latin	377.2	2006	…	…	…	…
Bolivia	Americas	Latin	223.6	2002	217.7	2001	…	…
Bosnia and Herzegovina	Europe	Southeast	280.0	2006	…	…	…	…
Brunei Darussalam	Asia	East / South-East	1086.5	2006	…	…	…	…
Canada	Americas	Canada / USA	191.4	2006	187.7	1995	0.2%	11
Chile	Americas	Latin	187.6	2004	272.4	1994	-3.7%	10
Colombia	Americas	Latin	229.2	2000	234.6	1995	-0.5%	5
Costa Rica	Americas	Latin	275.3	2006	291.8	1995	-0.5%	11
Croatia	Europe	Southeast	424.4	2006	415.7	1997	0.2%	9
Cyprus	Europe	West & Central	609.3	2006	520.2	1995	1.4%	11
Czech Republic	Europe	West & Central	449.6	2006	428.9	1995	0.4%	11
Denmark	Europe	West & Central	197.8	2006	196.8	1995	0.0%	11
Dominican Republic	Americas	Latin	303.5	2006	…	…	…	…
Ecuador	Americas	Latin	292.6	2006	…	…	…	…
El Salvador	Americas	Latin	275.2	2006	271.0	2001	0.3%	5
England and Wales	Europe	West & Central	263.4	2006	247.3	1995	0.6%	11
Estonia	Europe	West & Central	240.8	2006	344.7	1995	-3.2%	11
Finland	Europe	West & Central	157.9	2006	159.1	1995	-0.1%	11
France	Europe	West & Central	210.2	2000	195.6	1998	…	…
Georgia	Asia	Central	315.7	2006	252.0	1998	2.9%	8
Germany	Europe	West & Central	303.8	2006	303.5	1995	0.0%	11
Greece	Europe	West & Central	376.4	2006	359.9	1995	0.4%	11
Guatemala	Americas	Latin	237.2	2000	175.9	1998	…	…
Hong Kong SARC	Asia	East / South-East	445.5	2006	625.8	1995	-3.0%	11
Hungary	Europe	West & Central	310.1	2004	287.5	1998	1.3%	6
Iceland	Europe	West & Central	271.1	2004	226.9	1995	2.0%	9
India	Asia	South	122.5	2006	101.7	1995	1.7%	11
Ireland	Europe	West & Central	303.3	2006	300.0	1995	0.1%	11
Israel	Asia	Near and Middle East	330.1	2004	437.0	1995	-3.1%	9
Italy	Europe	West & Central	549.9	2006	552.7	1995	0.0%	11
Jamaica	Americas	Latin	273.9	2000	269.1	1998	…	…
Japan	Asia	East / South-East	199.8	2006	178.0	1995	1.1%	11
Jordan	Asia	Near and Middle East	115.9	2006	…	…	…	…
Kazakhstan	Asia	Central	462.0	2000	606.3	1995	-5.3%	5
Kenya	Africa	East	98.5	2006	…	…	…	…
Kuwait	Asia	Near and Middle East	1065.2	2002	881.4	2001	…	…
Kyrgyzstan	Asia	Central	337.6	2000	348.5	1995	-0.6%	5
Latvia	Europe	West & Central	604.8	2006	446.6	1998	3.9%	8
Lebanon	Asia	Near and Middle East	574.2	2006	…	…	…	…
Lithuania	Europe	West & Central	333.5	2006	480.9	1995	-3.3%	11
Luxembourg	Europe	West & Central	291.8	2002	280.5	2001	…	…
Malaysia	Asia	East / South-East	354.0	2000	403.9	1995	-2.6%	5
Maldives	Asia	South	302.7	2004	267.5	2003	…	…
Malta	Europe	West & Central	433.8	2006	451.5	2001	-0.8%	5
Mauritius	Africa	East	776.5	2006	870.2	1995	-1.0%	11

Mexico	Americas	Latin	485.9	2002	…	…	…	…
Mongolia	Asia	East / South-East	277.3	2004	…	…	…	…
Montenegro	Europe	Southeast	890.9	2006	…	…	…	…
Morocco	Africa	North	142.8	2006	142.9	2001	0.0%	5
Myanmar	Asia	East / South-East	145.6	2002	146.6	2001	…	…
Nepal	Asia	South	202.0	2006	185.8	2001	1.7%	5
Netherlands	Europe	West & Central	215.5	2006	195.4	1995	0.9%	11
New Zealand	Oceania	…	187.0	2006	185.8	1995	0.1%	11
Nicaragua	Americas	Latin	166.8	2006	…	…	…	…
Northern Ireland	Europe	West & Central	523.8	2006	698.3	1995	-2.6%	11
Norway	Europe	West & Central	248.3	2000	233.9	1998	…	…
Panama	Americas	Latin	498.0	2002	482.8	1997	0.6%	5
Papua New Guinea	Oceania	…	101.4	2000	114.6	1998	…	…
Paraguay	Americas	Latin	331.5	2006	…	…	…	…
Peru	Americas	Latin	323.0	2004	…	…	…	…
Philippines	Asia	East / South-East	131.9	2006	149.1	1998	-1.5%	8
Poland	Europe	West & Central	259.6	2006	257.9	1995	0.1%	11
Portugal	Europe	West & Central	419.4	2006	435.7	1995	-0.3%	11
Qatar	Asia	Near and Middle East	435.5	2004	…	…	…	…
Republic of Korea	Asia	East / South-East	195.1	2004	180.6	1995	0.9%	9
Republic of Moldova	Europe	East	281.5	2006	169.7	1995	4.7%	11
Romania	Europe	Southeast	233.8	2006	237.9	1995	-0.2%	11
Scotland	Europe	West & Central	317.2	2006	361.4	1995	-1.2%	11
Serbia	Europe	Southeast	440.1	2006	…	…	…	…
Singapore	Asia	East / South-East	396.4	2006	264.3	1995	3.8%	11
Slovakia	Europe	West & Central	378.4	2006	370.3	1998	0.3%	8
Slovenia	Europe	West & Central	391.8	2006	199.1	1995	6.3%	11
South Africa	Africa	Southern	219.9	2002	343.5	1995	-6.2%	7
Spain	Europe	West & Central	313.0	2006	310.7	1995	0.1%	11
Sri Lanka	Asia	South	330.5	2004	310.7	1995	0.7%	9
Swaziland	Africa	Southern	263.4	2004	225.0	1998	2.7%	6
Sweden	Europe	West & Central	191.2	2006	280.5	1995	-3.4%	11
Switzerland	Europe	West & Central	222.6	2006	201.1	1995	0.9%	11
Syrian Arab Republic	Asia	Near and Middle East	10.2	2004	…	…	…	…
TFYR Macedonia	Europe	Southeast	480.0	2006	420.0	1998	1.7%	8
Thailand	Asia	East / South-East	321.0	2006	365.2	1995	-1.2%	11
Turkey	Europe	Southeast	451.9	2006	206.1	1995	7.4%	11
Ukraine	Europe	East	358.2	2006	467.0	1995	-2.4%	11
Uruguay	Americas	Latin	507.4	2004	532.1	2001	-1.6%	3
USA	Americas	Canada / USA	223.6	2006	243.6	1995	-0.8%	11
Venezuela	Americas	Latin	15.6	2002	15.1	2001	…	…
Zambia	Africa	Southern	122.3	2000	111.3	1998	…	…
Zimbabwe	Africa	Southern	186.8	2004	161.3	1997	2.1%	7
Median			303.3		272.4		0.1%	11.0
Mean			341.8		315.8		0.0%	9.1
Standard deviation			241.5		164.4		2.4%	2.5

Table 2. Prosecutors per 100,000 population by country

Country	Continent	Sub-continent	Latest available	Year	Trend start	Year	Average annual change rate	Trend length in years
Albania	Europe	Southeast	12.8	2004	11.6	2001	3.4%	3
Algeria	Africa	North	1.7	2006	…	…	…	…
Armenia	Asia	Central	19.7	2006	…	…	…	…
Austria	Europe	West & Central	5.3	2006	…	…	…	…
Azerbaijan	Asia	Central	10.8	2006	15.8	1995	-3.4%	11
Barbados	Americas	Latin	3.2	2000	3.2	1998	…	…
Belarus	Europe	East	20.4	2006	19.6	2001	0.8%	5
Belize	Americas	Latin	2.4	2006	…	…	…	…
Bolivia	Americas	Latin	4.2	2006	…	…	…	…
Bosnia and Herzegovina	Europe	Southeast	7.4	2006	…	…	…	…
Bulgaria	Europe	Southeast	10.7	2004	7.2	1995	4.5%	9
Canada	Americas	Canada / USA	11.6	2001	10.4	1998	3.9%	3
Chile	Americas	Latin	15.8	2004	…	…	…	…
China	Asia	East and South-East	13.5	2000	17.2	1995	-4.7%	5
Colombia	Americas	Latin	44.9	2000	55.3	1995	-4.1%	5
Costa Rica	Americas	Latin	7.7	2006	8.4	1995	-0.8%	11
Croatia	Europe	Southeast	13.0	2006	6.7	1995	6.2%	11
Cyprus	Europe	West & Central	4.5	2004	6.3	1995	-3.7%	9
Czech Republic	Europe	West & Central	11.1	2006	8.2	1995	2.8%	11
Denmark	Europe	West & Central	11.2	2002	8.7	1995	3.6%	7
Dominican Republic	Americas	Latin	2.2	2006	4.1	1998	-7.4%	8
Ecuador	Americas	Latin	2.7	2006	…	…	…	…
Egypt	Africa	North	25.4	2000	22.1	1998	…	…
El Salvador	Americas	Latin	11.1	2002	10.9	2001	…	…
England and Wales	Europe	West & Central	5.8	2006	4.3	1995	2.8%	11
Estonia	Europe	West & Central	14.2	2006	10.1	1995	3.2%	11
Ethiopia	Africa	East	0.2	2002	0.2	2001	…	…
Finland	Europe	West & Central	6.9	2006	4.7	1995	3.6%	11
France	Europe	West & Central	2.7	2000	2.6	1998	…	…
Georgia	Asia	Central	12.2	2006	17.5	1995	-3.3%	11
Germany	Europe	West & Central	6.1	2006	6.6	1995	-0.7%	11
Greece	Europe	West & Central	4.8	2006	4.1	1995	1.3%	11
Guatemala	Americas	Latin	19.0	2000	15.2	1998	…	…
Hungary	Europe	West & Central	15.4	2006	12.2	1998	3.0%	8
Iceland	Europe	West & Central	11.7	2004	5.6	1995	8.5%	9
Ireland	Europe	West & Central	1.8	2006	1.6	1995	1.3%	11
Israel	Asia	Near and Middle East	4.1	2004	6.4	1995	-4.9%	9
Italy	Europe	West & Central	3.8	2006	3.8	2001	-0.1%	5
Japan	Asia	East and South-East	2.0	2006	1.7	1995	1.4%	11
Kazakhstan	Asia	Central	21.8	2000	19.7	1995	2.0%	5
Kyrgyzstan	Asia	Central	13.4	2006	12.8	1995	0.4%	11
Latvia	Europe	West & Central	23.1	2006	24.0	1995	-0.4%	11
Lithuania	Europe	West & Central	25.2	2006	21.2	1995	1.6%	11
Malaysia	Asia	East and South-East	1.6	2006	0.5	1995	11.4%	11
Maldives	Asia	South	6.4	2002	7.2	2001	…	…
Malta	Europe	West & Central	1.5	2004	…	…	…	…
Mauritius	Africa	East	4.0	2006	…	…	…	…
Mexico	Americas	Latin	2.7	2006	1.6	2001	10.8%	5
Mongolia	Asia	East and South-East	14.4	2006	…	…	…	…
Morocco	Africa	North	1.8	2006	…	…	…	…
Myanmar	Asia	East and South-East	2.5	2002	2.4	2001	…	…
Nepal	Asia	South	0.8	2006	0.9	2001	-2.7%	5
Netherlands	Europe	West & Central	4.1	2006	3.6	2001	2.9%	5
Nicaragua	Americas	Latin	5.2	2006	…	…	…	…
Northern Ireland	Europe	West & Central	1.6	2002	1.5	2001	…	…
Norway	Europe	West & Central	2.0	2006	…	…	…	…
Occupied Palestinian Territory	Asia	Near and Middle East	3.0	2006	1.6	1997	7.5%	9

Oman	Asia	Near and Middle East	12.0	2002	12.4	2001	…	…
Panama	Americas	Latin	2.4	2006	…	…	…	…
Papua New Guinea	Oceania	...	0.5	2000	0.6	1998	…	…
Peru	Americas	Latin	16.3	2004	13.2	2001	7.1%	3
Philippines	Asia	East and South-East	1.7	2004	…	…	…	…
Poland	Europe	West & Central	15.6	2006	14.1	2001	2.1%	5
Portugal	Europe	West & Central	11.6	2006	9.4	1995	2.0%	11
Qatar	Asia	Near and Middle East	5.7	2000	6.3	1998	…	…
Republic of Korea	Asia	East and South-East	3.1	2004	2.1	1995	4.2%	9
Republic of Moldova	Europe	East	20.1	2006	10.9	1995	5.8%	11
Romania	Europe	Southeast	9.5	2006	8.2	1995	1.4%	11
Russian Federation	Europe	East	30.3	2000	29.8	1999	…	…
Saudi Arabia	Asia	Near and Middle East	6.6	2002	6.0	2001	…	…
Scotland	Europe	West & Central	9.3	2006	5.4	1995	5.1%	11
Singapore	Asia	East and South-East	2.2	2006	2.0	1995	0.9%	11
Slovakia	Europe	West & Central	14.5	2006	10.3	1995	3.2%	11
Slovenia	Europe	West & Central	9.7	2006	7.2	1995	2.8%	11
South Africa	Africa	Southern	5.5	2002	3.9	1995	4.9%	7
Spain	Europe	West & Central	3.6	2000	…	…	…	…
Swaziland	Africa	Southern	4.4	2006	…	…	…	…
Sweden	Europe	West & Central	8.9	2006	7.9	1995	1.0%	11
Syrian Arab Republic	Asia	Near and Middle East	1.8	2000	1.9	1998	…	…
TFYR Macedonia	Europe	Southeast	9.1	2006	8.6	1998	0.7%	8
Thailand	Asia	East and South-East	3.1	2000	2.7	1998	…	…
Turkey	Europe	Southeast	4.8	2006	4.6	1995	0.4%	11
Ukraine	Europe	East	23.8	2006	…	…	…	…
United Arab Emirates	Asia	Near and Middle East	3.0	2006	…	…	…	…
Uruguay	Americas	Latin	12.7	2000	11.7	1998	…	…
USA	Americas	Canada / USA	8.8	2005	8.7	1997	0.1%	8
Venezuela	Americas	Latin	4.8	2006	…	…	…	…
Zambia	Africa	Southern	0.2	2000	0.3	1998	…	…
Zimbabwe	Africa	Southern	1.4	2000	1.2	1998	…	…
Median			6.1		6.9		2.0%	11.0
Mean			8.8		8.8		1.9%	8.8
Standard deviation			7.9		8.6		3.8%	2.7

Table 3. Professional judges per 100,000 population by country

Country	Continent	Sub-continent	Latest available	Year	Trend start	Year	Average annual change rate	Trend length in years
Afghanistan	Asia	Near and Middle East	8.8	2002	9.1	2001	…	…
Albania	Europe	Southeast	10.8	2002	8.8	1998	5.4%	4
Algeria	Africa	North	9.3	2006	…	…	…	…
Armenia	Asia	Central	5.8	2006	…	…	…	…
Austria	Europe	West & Central	28.5	2006	…	…	…	…
Azerbaijan	Asia	Central	3.9	2004	2.7	1995	4.2%	9
Bahrain	Asia	Near and Middle East	15.9	2005	9.3	1995	5.5%	10
Barbados	Americas	Latin	7.2	2000	7.1	1998	…	…
Belarus	Europe	East	9.7	2006	8.5	1995	1.2%	11
Belgium	Europe	West & Central	23.2	2002	12.3	1995	9.5%	7
Bolivia	Americas	Latin	10.3	2006	…	…	…	…
Bosnia and Herzegovina	Europe	Southeast	22.4	2006	…	…	…	…
Bulgaria	Europe	Southeast	19.6	2004	12.1	1995	5.5%	9
Canada	Americas	Canada / USA	6.5	2003	6.6	1998	-0.3%	5
Chile	Americas	Latin	5.0	2004	3.4	1998	6.8%	6
China	Asia	East and South-East	15.9	2002	14.0	1995	1.8%	7
Colombia	Americas	Latin	10.0	2000	11.0	1995	-1.8%	5
Costa Rica	Americas	Latin	18.0	2006	14.3	1995	2.1%	11
Croatia	Europe	Southeast	43.7	2006	25.1	1995	5.2%	11
Cyprus	Europe	West & Central	11.7	2006	8.2	1995	3.3%	11
Czech Republic	Europe	West & Central	28.6	2006	21.1	1995	2.8%	11

Denmark	Europe	West & Central	12.9	2004	12.4	1997	0.6%	7
Dominican Republic	Americas	Latin	5.9	2006	6.1	2000	-0.3%	6
Ecuador	Americas	Latin	1.0	2004	…	…	…	…
Egypt	Africa	North	9.8	2006	…	…	…	…
El Salvador	Americas	Latin	5.4	2006	…	…	…	…
England and Wales	Europe	West & Central	7.0	2006	6.3	2000	1.8%	6
Estonia	Europe	West & Central	17.9	2006	13.0	1995	3.0%	11
Ethiopia	Africa	East	0.2	2002	0.2	2001	…	…
Finland	Europe	West & Central	13.1	2006	18.2	1995	-2.9%	11
France	Europe	West & Central	11.5	2000	11.1	1998	…	…
Georgia	Asia	Central	7.3	2004	7.5	1995	-0.3%	9
Germany	Europe	West & Central	17.8	2006	27.1	1995	-3.7%	11
Greece	Europe	West & Central	25.0	2006	19.5	1995	2.3%	11
Guatemala	Americas	Latin	3.4	2000	3.3	1998	…	…
Hong Kong SARC	Asia	East and South-East	2.2	2006	2.4	1995	-0.8%	11
Hungary	Europe	West & Central	26.8	2004	23.5	1998	2.2%	6
Iceland	Europe	West & Central	16.1	2004	17.6	1995	-0.9%	9
Ireland	Europe	West & Central	3.0	2004	2.4	1995	2.5%	9
Israel	Asia	Near and Middle East	8.2	2004	6.7	1995	2.3%	9
Italy	Europe	West & Central	10.9	2006	14.4	1995	-2.5%	11
Japan	Asia	East and South-East	2.6	2006	2.3	1995	1.3%	11
Kenya	Africa	East	0.8	2006	…	…	…	…
Kyrgyzstan	Asia	Central	6.2	2006	5.0	1995	1.9%	11
Latvia	Europe	West & Central	20.4	2006	9.8	1995	6.9%	11
Lithuania	Europe	West & Central	21.7	2006	12.6	1995	5.1%	11
Luxembourg	Europe	West & Central	16.5	2002	16.5	2001	…	…
Malaysia	Asia	East and South-East	0.9	2006	1.6	1998	-7.7%	8
Malta	Europe	West & Central	8.2	2006	8.7	2001	-1.2%	5
Mauritius	Africa	East	4.1	2006	3.7	1995	0.9%	11
Mexico	Americas	Latin	0.8	2004	…	…	…	…
Mongolia	Asia	East and South-East	15.1	2006	…	…	…	…
Morocco	Africa	North	10.1	2006	…	…	…	…
Myanmar	Asia	East and South-East	2.4	2002	2.5	2001	…	…
Nepal	Asia	South	0.8	2006	…	…	…	…
Netherlands	Europe	West & Central	12.6	2006	…	…	…	…
New Zealand	Oceania	...	4.0	2002	4.2	1995	-0.6%	7
Northern Ireland	Europe	West & Central	7.0	2002	6.7	2001	…	…
Norway	Europe	West & Central	11.4	2006	…	…	…	…
Occupied Palestinian Territory	Asia	Near and Middle East	3.7	2006	2.4	1997	4.8%	9
Panama	Americas	Latin	8.0	2006	7.7	1998	0.5%	8
Papua New Guinea	Oceania	...	0.3	2000	0.3	1998	…	…
Philippines	Asia	East and South-East	2.5	2006	2.0	1998	2.4%	8
Poland	Europe	West & Central	25.9	2006	19.8	2001	5.5%	5
Portugal	Europe	West & Central	15.6	2006	11.6	1995	2.7%	11
Qatar	Asia	Near and Middle East	9.2	2000	9.0	1998	…	…
Republic of Korea	Asia	East and South-East	3.5	2004	2.5	1995	3.9%	9
Republic of Moldova	Europe	East	11.6	2006	5.5	1995	7.1%	11
Romania	Europe	Southeast	19.0	2006	12.4	1995	4.0%	11
Russian Federation	Europe	East	46.4	2000	45.0	1999	…	…
Saudi Arabia	Asia	Near and Middle East	3.2	2002	3.1	1998	1.3%	4
Scotland	Europe	West & Central	3.6	2006	5.1	1995	-3.2%	11
Singapore	Asia	East and South-East	2.3	2006	2.7	1995	-1.4%	11
Slovakia	Europe	West & Central	24.7	2004	21.1	1995	1.8%	9
Slovenia	Europe	West & Central	50.0	2006	34.8	1995	3.3%	11
South Africa	Africa	Southern	4.3	2002	4.0	1995	1.2%	7
Spain	Europe	West & Central	9.8	2006	8.1	1995	1.8%	11
Swaziland	Africa	Southern	0.9	2000	1.0	1998	…	…
Sweden	Europe	West & Central	16.8	2006	13.9	1995	1.8%	11
Switzerland	Europe	West & Central	10.6	2002	…	…	…	…
Syrian Arab Republic	Asia	Near and Middle East	6.6	2000	7.4	1998	…	…
Tajikistan	Asia	Central	4.8	2006	0.5	1995	23.7%	11
TFYR Macedonia	Europe	Southeast	29.5	2006	17.3	1995	5.0%	11
Thailand	Asia	East and South-East	5.7	2006	3.9	1998	4.8%	8

Turkey	Europe	Southeast	8.6	2006	9.0	1995	-0.4%	11
Ukraine	Europe	East	11.5	2004	13.9	1995	-2.1%	9
Uruguay	Americas	Latin	13.2	2000	14.1	1995	-1.2%	5
USA	Americas	Canada / USA	10.8	2001	10.2	1998	1.7%	3
Venezuela	Americas	Latin	2.6	2000	1.2	1998	…	…
Zambia	Africa	Southern	9.8	2000	…	…	…	…
Zimbabwe	Africa	Southern	0.7	2000	0.6	1998	…	…
Median			9.7		8.3		1.8%	9.0
Mean			11.4		9.8		2.2%	8.9
Standard deviation			9.9		8.2		4.2%	2.4

Table 4. Correctional staff in adult prisons per 100,000 population by country

Country	Continent	Subcontinent	Latest available	Year	Trend start	Year	Average annual change rate	Trend length in years
Albania	Europe	Southeast	48.8	2002	40.0	2001	…	…
Algeria	Africa	North	50.7	2006	…	…	…	…
Armenia	Asia	Central	36.3	2006	…	…	…	…
Austria	Europe	West & Central	48.6	2006	…	…	…	…
Azerbaijan	Asia	Central	70.5	2006	26.9	1995	9.2%	11
Bahrain	Asia	Near and Middle East	55.4	2004	62.0	1995	-1.2%	9
Bangladesh	Asia	South	5.4	2006	…	…	…	…
Barbados	Americas	Latin	18.3	2000	15.8	1998	…	…
Belarus	Europe	East	65.4	2006	61.0	1998	0.9%	8
Belgium	Europe	West & Central	67.7	2002	42.5	1995	6.9%	7
Belize	Americas	Latin	95.3	2006	52.2	1995	5.6%	11
Bolivia	Americas	Latin	13.5	2006	…	…	…	…
Bosnia and Herzegovina	Europe	Southeast	20.3	2006	…	…	…	…
Botswana	Africa	Southern	73.0	2000	76.1	1998	…	…
Brunei Darussalam	Asia	East and South-East	93.4	2004	…	…	…	…
Bulgaria	Europe	Southeast	35.8	2004	32.2	1995	1.2%	9
Canada	Americas	Canada / USA	92.5	2006	97.5	1995	-0.5%	11
Chile	Americas	Latin	42.6	2004	47.4	1995	-1.2%	9
China	Asia	East and South-East	22.1	2000	22.4	1995	-0.3%	5
Colombia	Americas	Latin	160.4	2004	…	…	…	…
Costa Rica	Americas	Latin	69.7	2006	50.9	2001	6.5%	5
Croatia	Europe	Southeast	50.9	2006	69.5	2001	-6.0%	5
Cyprus	Europe	West & Central	41.2	2006	29.1	1995	3.2%	11
Czech Republic	Europe	West & Central	104.6	2006	79.5	1995	2.5%	11
Denmark	Europe	West & Central	92.4	2006	63.7	1995	3.4%	11
Dominican Republic	Americas	Latin	9.4	2006	2.6	1995	12.3%	11
Ecuador	Americas	Latin	87.9	2004	…	…	…	…
Egypt	Africa	North	13.2	2001	…	…	…	…
El Salvador	Americas	Latin	21.7	2002	…	…	…	…
England and Wales	Europe	West & Central	85.1	2004	63.7	1997	4.2%	7
Estonia	Europe	West & Central	109.2	2004	160.1	1995	-4.2%	9
Finland	Europe	West & Central	52.5	2006	51.7	1995	0.1%	11
Georgia	Asia	Central	72.5	2004	33.6	1995	8.9%	9
Germany	Europe	West & Central	43.8	2006	44.1	1997	-0.1%	9
Greece	Europe	West & Central	35.1	2006	18.4	1995	6.0%	11
Guatemala	Americas	Latin	62.1	2000	70.7	1999	…	…
Hong Kong SARC	Asia	East and South-East	64.4	2006	63.1	1995	0.2%	11
Hungary	Europe	West & Central	72.4	2002	59.2	1995	2.9%	7
Iceland	Europe	West & Central	31.9	2004	32.2	1995	-0.1%	9
India	Asia	South	4.2	2005	2.4	1995	5.8%	10
Ireland	Europe	West & Central	73.9	2006	69.1	1995	0.6%	11
Israel	Asia	Near and Middle East	100.1	2006	69.1	1995	3.4%	11
Italy	Europe	West & Central	82.6	2006	75.6	1995	0.8%	11
Japan	Asia	East and South-East	12.8	2006	10.6	1997	2.0%	9
Jordan	Asia	Near and Middle East	45.4	2006	14.1	1995	11.2%	11

Kazakhstan	Asia	Central	111.1	2006	56.3	1995	6.4%	11
Kenya	Africa	East	34.2	2006	…	…	…	…
Kuwait	Asia	Near and Middle East	20.3	2002	22.7	2001	…	…
Kyrgyzstan	Asia	Central	32.2	2004	41.2	1995	-2.7%	9
Latvia	Europe	West & Central	127.5	2006	75.8	1995	4.8%	11
Lebanon	Asia	Near and Middle East	10.9	2006	…	…	…	…
Lithuania	Europe	West & Central	90.9	2006	85.0	1995	0.6%	11
Luxembourg	Europe	West & Central	66.3	2002	65.1	2001	…	…
Malaysia	Asia	East and South-East	43.4	2000	38.7	1995	2.3%	5
Maldives	Asia	South	54.8	2004	39.1	2001	11.9%	3
Malta	Europe	West & Central	47.2	2006	52.6	2001	-2.1%	5
Mauritius	Africa	East	73.8	2006	60.1	1995	1.9%	11
Mongolia	Asia	East and South-East	82.4	2006	…	…	…	…
Morocco	Africa	North	16.4	2006	17.1	2001	-0.8%	5
Myanmar	Asia	East and South-East	6.8	2002	7.0	2001	…	…
Nepal	Asia	South	2.3	2006	…	…	…	…
Netherlands	Europe	West & Central	85.7	2006	67.4	1995	2.2%	11
New Zealand	Oceania	...	54.5	2002	57.8	2001	…	…
Northern Ireland	Europe	West & Central	106.5	2006	156.6	1995	-3.4%	11
Oman	Asia	Near and Middle East	13.1	2000	13.5	1998	…	…
Panama	Americas	Latin	23.4	2006	43.1	1995	-5.4%	11
Papua New Guinea	Oceania	...	27.7	2000	29.2	1998	…	…
Paraguay	Americas	Latin	17.3	2006	21.5	1998	-2.7%	8
Peru	Americas	Latin	17.8	2004	18.2	2001	-0.9%	3
Philippines	Asia	East and South-East	10.8	2006	7.8	1998	4.2%	8
Poland	Europe	West & Central	70.1	2006	62.9	2001	2.2%	5
Portugal	Europe	West & Central	57.5	2006	43.1	1995	2.7%	11
Qatar	Asia	Near and Middle East	48.1	2004	56.7	1998	-2.7%	6
Republic of Korea	Asia	East and South-East	27.7	2006	25.5	1995	0.8%	11
Republic of Moldova	Europe	East	71.6	2006	41.9	1995	5.0%	11
Romania	Europe	Southeast	45.5	2006	26.5	1995	5.0%	11
Saudi Arabia	Asia	Near and Middle East	56.3	2002	55.8	2001	…	…
Scotland	Europe	West & Central	67.8	2006	71.3	1995	-0.5%	11
Singapore	Asia	East and South-East	45.8	2006	44.3	1995	0.3%	11
Slovakia	Europe	West & Central	97.5	2006	79.7	1995	1.9%	11
Slovenia	Europe	West & Central	33.0	2006	36.8	1995	-1.0%	11
South Africa	Africa	Southern	47.7	2002	71.5	1995	-5.6%	7
Spain	Europe	West & Central	45.4	2004	47.7	1995	-0.6%	9
Sri Lanka	Asia	South	23.7	2004	24.1	1995	-0.2%	9
Suriname	Americas	Latin	85.6	2000	88.1	1998	…	…
Swaziland	Africa	Southern	103.6	2006	97.2	1998	0.8%	8
Sweden	Europe	West & Central	81.2	2006	63.6	1995	2.2%	11
Switzerland	Europe	West & Central	68.4	2002	38.8	1995	8.4%	7
Syrian Arab Republic	Asia	Near and Middle East	8.9	2004	…	…	…	…
TFYR Macedonia	Europe	Southeast	23.8	2006	20.9	1998	1.7%	8
Thailand	Asia	East and South-East	16.6	2006	17.5	1998	-0.6%	8
Turkey	Europe	Southeast	35.3	2006	39.3	1995	-1.0%	11
Ukraine	Europe	East	102.5	2006	114.2	1998	-1.3%	8
United Arab Emirates	Asia	Near and Middle East	78.6	2004	…	…	…	…
Uruguay	Americas	Latin	80.5	2004	…	…	…	…
USA	Americas	Canada / USA	138.3	2000	119.0	1995	3.1%	5
Venezuela	Americas	Latin	11.6	2002	6.8	2000	…	…
Zambia	Africa	Southern	17.4	2000	17.7	1998	…	…
Zimbabwe	Africa	Southern	61.7	2004	29.8	1995	8.4%	9
Median			50.7		44.3		1.2%	9.0
Mean			54.4		49.7		1.9%	9.0
Standard deviation			33.6		31.1		4.0%	2.3

Table 5. Performance rates and trends by country

Country	Region	CPM	SR	Y	ACR	TL	PPR	Y	ACR	TL	PCR	Y	ACR	TL
Albania	Europe	0.012	0.5	02	…	…	19.5	04	…	…	11.8	02	…	…
Algeria	Africa	0.961	…	…	…	…	1017.0	06	…	…	…	…	…	…
Armenia	Asia	0.003	…	…	…	…	6.4	06	…	…	5.4	06	…	…
Austria	Europe	0.325	8.8	06	1.5%	5	677.1	06	…	…	99.7	06	…	…
Azerbaijan	Asia	0.020	1.6	06	…	…	13.3	06	13.9%	11	14.1	04	1.7%	9
Bahrain	Asia	0.027	1.4	04	…	…	…	…	…	…	…	…	…	…
Bangladesh	Asia	0.024	1.3	06	…	…	…	…	…	…	…	…	…	…
Barbados	Americas	0.547	…	…	…	…	580.4	00	…	…	…	…	…	…
Belarus	Europe	0.048	2.6	04	…	…	39.5	06	5.1%	5	39.3	06	8.9%	5
Belize	Americas	0.053	4.1	06	…	…	25.0	06	…	…	…	…	…	…
Bolivia	Americas	0.005	0.3	02	…	…	…	…	…	…	4.8	06	…	…
Bosnia and Herzegovina	Europe	0.077	2.8	06	…	…	85.9	06	…	…	64.8	06	…	…
Brunei Darussalam	Asia	0.008	0.5	06	…	…	…	…	…	…	…	…	…	…
Bulgaria	Europe	0.060	…	…	…	…	76.5	04	7.4%	9	35.7	04	6.9%	9
Canada	Americas	0.164	10.2	06	-0.4%	11	149.1	01	-2.3%	3	89.6	01	-3.5%	3
Chile	Americas	0.138	16.6	04	7.5%	9	32.5	04	…	…	20.1	04	…	…
China	Asia	0.001	…	…	…	…	4.1	00	7.7%	5	3.7	00	7.5%	5
Colombia	Americas	0.035	1.7	00	17.4%	5	…	…	…	…	…	…	…	…
Costa Rica	Americas	0.015	0.8	06	-4.3%	11	24.9	06	0.8%	9	10.6	06	3.9%	8
Croatia	Europe	0.075	1.7	06	1.4%	9	136.6	06	-1.2%	11	43.7	06	-1.0%	11
Cyprus	Europe	0.038	1.9	06	3.6%	11	…	…	…	…	…	…	…	…
Czech Republic	Europe	0.087	2.7	06	-1.0%	8	125.5	06	-0.2%	11	61.4	06	-0.5%	11
Denmark	Europe	0.115	5.4	04	-1.0%	9	49.1	02	…	…	125.5	00	-6.5%	5
Dominican Republic	Americas	0.036	2.4	06	…	…	42.2	06	1.7%	7	16.8	06	1.2%	8
Ecuador	Americas	0.007	0.6	06	…	…	16.0	04	…	…	2.3	04	…	…
El Salvador	Americas	0.091	8.1	06	25.5%	5	107.3	02	…	…	3.5	02	…	…
England and Wales	Europe	0.483	10.4	06	-4.2%	11	566.7	06	…	…	452.7	06	-2.7%	11
Estonia	Europe	0.102	5.4	06	9.0%	11	91.1	06	2.3%	11	73.5	04	3.2%	9
Ethiopia	Africa	0.026	…	…	…	…	…	…	…	…	19.3	02	…	…
Finland	Europe	0.833	46.0	06	5.2%	11	614.2	06	4.9%	11	602.7	06	5.1%	11
France	Europe	0.546	…	…	…	…	…	…	…	…	358.3	00	…	…
Georgia	Asia	0.033	1.3	06	…	…	33.2	06	12.8%	11	31.6	06	13.3%	11
Germany	Europe	0.168	9.1	06	0.6%	11	146.5	06	1.9%	11	115.1	06	2.0%	11
Greece	Europe	0.218	10.1	06	3.0%	11	…	…	…	…	…	…	…	…
Guatemala	Americas	0.062	2.5	00	…	…	…	…	…	…	16.4	00	…	…
Hong Kong SARC	Asia	0.027	1.4	06	…	…	…	…	…	…	…	…	…	…
Hungary	Europe	0.082	4.2	04	-2.2%	6	66.7	06	-6.3%	8	67.5	04	-2.3%	6
Iceland	Europe	0.091	4.4	03	…	…	74.1	04	4.6%	9	75.5	04	6.2%	4
India	Asia	0.093	4.4	06	4.7%	11	…	…	…	…	…	…	…	…
Ireland	Europe	0.208	4.0	06	0.7%	11	354.8	04	-5.5%	6	…	…	…	…
Israel	Asia	0.163	6.9	04	7.8%	9	148.3	04	2.9%	9	135.8	04	3.6%	9
Italy	Europe	0.141	2.5	06	0.3%	11	255.4	05	2.0%	4	88.9	06	-4.1%	5
Jamaica	Americas	0.101	4.8	00	…	…	…	…	…	…	…	…	…	…
Japan	Asia	0.048	1.5	06	1.3%	11	72.3	06	1.7%	11	34.7	06	1.8%	11
Kazakhstan	Asia	0.026	1.3	00	6.4%	5	…	…	…	…	…	…	…	…
Kenya	Africa	0.042	2.1	06	…	…	…	…	…	…	…	…	…	…
Kuwait	Asia	0.013	0.7	02	…	…	…	…	…	…	…	…	…	…
Kyrgyzstan	Asia	0.024	1.4	00	1.1%	5	22.7	06	-4.1%	11	19.0	06	-6.3%	8
Latvia	Europe	0.026	1.3	06	-3.0%	8	33.6	04	5.7%	9	19.0	06	0.9%	11
Lebanon	Asia	0.005	0.3	06	…	…	…	…	…	…	…	…	…	…
Lithuania	Europe	0.025	2.0	06	3.7%	11	20.2	06	-9.1%	5	15.2	06	-4.0%	11
Malaysia	Asia	0.195	0.4	00	…	…	299.4	06	…	…	196.9	06	…	…
Maldives	Asia	0.113	3.1	04	…	…	175.0	02	…	…	…	…	…	…
Malta	Europe	0.040	2.0	04	4.5%	3	…	…	…	…	…	…	…	…
Mauritius	Africa	0.265	2.1	06	-1.7%	11	225.8	06	…	…	355.6	04	…	…
Mexico	Americas	0.043	0.5	02	…	…	53.5	02	…	…	50.4	06	…	…
Mongolia	Asia	0.039	2.4	04	…	…	45.4	06	…	…	21.0	06	…	…
Montenegro	Europe	0.028	1.4	06	…	…	…	…	…	…	…	…	…	…
Morocco	Africa	0.149	7.0	06	2.1%	5	…	…	…	…	…	…	…	…
Myanmar	Asia	0.012	0.3	02	…	…	20.5	02	…	…	13.3	02	…	…

Nepal	Asia	0.027	0.7	02	…	…	58.1	02	…	…	13.5	06	…	…
Netherlands	Europe	0.284	10.1	06	2.0%	11	380.8	06	0.6%	5	181.6	06	0.4%	5
New Zealand	Oceania	0.569	26.2	06	0.5%	11	…	…	…	…	…	…	…	…
Nicaragua	Americas	0.087	4.4	06	…	…	89.8	06	…	…	…	…	…	…
Northern Ireland	Europe	0.534	3.3	02	…	…	1057.9	02	…	…	…	…	…	…
Norway	Europe	0.195	3.1	00	…	…	309.7	05	…	…	152.5	06	…	…
Occupied Palestinian Territory	Asia	0.023	…	…	…	…	…	…	…	…	17.5	06	-8.3%	9
Oman	Asia	0.051	…	…	…	…	57.9	02	…	…	…	…	…	…
Panama	Americas	0.117	1.4	02	…	…	251.6	06	…	…	59.4	06	…	…
Papua New Guinea	Oceania	0.021	1.1	00	…	…	39.3	00	…	…	7.3	00	…	…
Paraguay	Americas	0.011	0.6	06	…	…	…	…	…	…	…	…	…	…
Peru	Americas	0.008	0.5	04	…	…	11.9	02	…	…	…	…	…	…
Poland	Europe	0.115	5.9	06	3.1%	11	105.5	06	4.3%	5	82.4	06	7.2%	5
Portugal	Europe	0.096	5.9	06	1.6%	11	86.5	06	-1.0%	11	56.6	06	3.5%	11
Qatar	Asia	0.088	1.6	04	…	…	…	…	…	…	74.6	00	…	…
Republic of Korea	Asia	0.545	24.5	04	3.2%	9	934.8	04	0.1%	9	145.7	04	-0.1%	9
Republic of Moldova	Europe	0.026	1.7	06	-1.3%	11	28.6	00	-3.1%	5	16.7	06	-5.9%	11
Romania	Europe	0.046	3.8	06	0.2%	11	25.7	06	-7.8%	11	27.6	06	-6.1%	11
Russian Federation	Europe	0.033	…	…	…	…	34.3	00	…	…	26.7	00	…	…
Saudi Arabia	Asia	0.060	…	…	…	…	…	…	…	…	41.4	02	…	…
Scotland	Europe	0.155	…	…	…	…	138.8	05	-6.9%	10	120.5	05	-6.4%	10
Serbia	Europe	0.000	0.1	06	…	…	…	…	…	…	…	…	…	…
Singapore	Asia	0.085	1.2	06	-4.3%	8	128.8	06	-5.4%	11	77.4	00	-15.5%	5
Slovakia	Europe	0.051	2.6	06	0.8%	5	59.5	06	-2.3%	11	33.0	06	-3.1%	11
Slovenia	Europe	0.061	2.3	06	-4.2%	11	79.4	06	-4.8%	11	44.3	06	4.2%	11
Spain	Europe	0.043	2.1	06	2.6%	11	…	…	…	…	…	…	…	…
Sri Lanka	Asia	0.165	7.7	04	…	…	…	…	…	…	…	…	…	…
Swaziland	Africa	0.453	10.4	04	-5.8%	6	724.1	04	…	…	…	…	…	…
Sweden	Europe	0.166	6.3	06	4.7%	11	151.2	06	-4.8%	8	148.1	06	-2.8%	11
Switzerland	Europe	0.081	3.9	06	…	…	…	…	…	…	…	…	…	…
Syrian Arab Republic	Asia	0.991	45.6	04	…	…	…	…	…	…	…	…	…	…
TFYR Macedonia	Europe	0.078	1.9	06	…	…	126.4	06	…	…	54.4	06	…	…
Thailand	Asia	0.187	1.0	00	0.2%	5	379.0	00	…	…	…	…	…	…
Turkey	Europe	0.456	2.7	06	1.9%	11	953.3	06	5.2%	11	271.4	06	…	…
Ukraine	Europe	0.017	1.0	06	-1.7%	11	18.6	06	…	…	14.5	06	…	…
United Arab Emirates	Asia	1.000	…	…	…	…	…	…	…	…	654.9	06	…	…
United States of America	Americas	0.456	21.0	06	-0.8%	11	…	…	…	…	…	…	…	…
Uruguay	Americas	0.070	8.7	04	16.7%	3	15.0	00	…	…	11.6	00	…	…
Venezuela	Americas	0.058	…	…	…	…	65.5	06	…	…	…	…	…	…
Zambia	Africa	0.107	1.3	00	…	…	…	…	…	…	108.2	00	…	…
Zimbabwe	Africa	0.435	14.0	04	11.6%	7	330.8	00	…	…	454.6	00	…	…
Median		2.4					82.6				44.3			
Mean		5.2					194.0				97.1			
Standard deviation		8.0					262.3				138.6			

Legend: CPM = Combined productivitiy measure; **SR** = Suspects per police officer ratio; **PPR** = Persons prosecuted ratio; **PCR** = Persons convicted ratio; **Y** = Reference year; **ACR** = Average annual change rate; **TL** = Trend length

Table 6. Total number of prisoners by total number of convictions and other punitivity measures by country

Country	Region	PR	PC	Y	SIP	Y	PPO	S	>1yAO	S	>2yR	S	>1yT	S
Albania	Europe	0.33	142.1	02	47.5	02	…	…	…	…	…	…	…	…
Argentina	Americas	0.77	67.8	02	52.5	06	…	…	…	…	…	…	…	…
Armenia	Asia	0.69	105.5	06	73.3	06	…	…	…	…	…	…	…	…
Australia	Oceania	1.38	69.2	04	95.5	04	33%	ICVS	…	…	…	…	…	…
Austria	Europe	0.14	524.8	06	73.5	06	13%	EU ICS	5.2%	ESB	30.7%	ESB	8.5%	ESB
Azerbaijan	Asia	1.21	159.4	04	192.4	06	17%	EU ICS	…	…	…	…	…	…
Bahrain	Asia	0.23	302.4	04	70.2	06	…	…	…	…	…	…	…	…
Belarus	Europe	0.48	800.8	06	382.8	06	…	…	…	…	…	…	…	…
Belgium	Europe	0.03	1371.7	02	43.8	02	…	…	…	…	…	…	…	…
Bolivia	Americas	0.97	20.5	06	19.8	06	…	…	…	…	…	…	…	…
Bosnia and Herzegovina	Europe	0.07	481.5	06	34.7	06	…	…	…	…	…	…	…	…
Bulgaria	Europe	0.30	380.6	04	114.0	04	50%	ICVS	10.9%	ESB	18.1%	ESB	12.5%	ESB

Canada	Americas	0.08	849.1	06	72.1	06	44%	ICVS	…	…	…	…	…	…
Chile	Americas	0.44	317.7	04	138.7	04	…	…	…	…	…	…	…	…
Costa Rica	Americas	1.81	81.6	06	147.5	06	…	…	…	…	…	…	…	…
Croatia	Europe	0.10	567.9	06	54.8	06	…	…	3.7%	ESB	15.6%	ESB	3.8%	ESB
Cyprus	Europe	0.34	174.4	06	58.6	06	…	…	14.3%	ESB	26.9%	ESB	13.4%	ESB
Czech Republic	Europe	0.23	679.2	06	158.2	06	…	…	5.2%	ESB	22.6%	ESB [2]	5.3%	ESB
Denmark	Europe	0.05	944.5	06	51.1	06	18%	EU ICS	…	…	…	…	…	…
Dominican Republic	Americas	0.83	37.5	06	31.0	06	…	…	…	…	…	…	…	…
Ecuador	Americas	1.95	18.2	04	35.4	04	…	…	…	…	…	…	…	…
Egypt	Africa	0.01	7105.5	06	70.1	02	…	…	…	…	…	…	…	…
El Salvador	Americas	19.83	8.2	06	162.7	06	…	…	…	…	…	…	…	…
England and Wales	Europe	0.04	2645.5	06	118.2	06	51%	EU ICS	2.2%	ESB	63.8%	ESB	6.7%	ESB
Estonia	Europe	0.26	942.4	04	242.8	06	26%	ICVS	…	…	…	…	…	…
Finland	Europe	0.01	4168.6	06	60.7	06	15%	EU ICS	0.7%	ESB	15.2%	ESB	0.1%	ESB
France	Europe	0.06	981.0	00	56.0	00	13%	EU ICS	3.6%	ESB	…	…	6.7%	ESB
Georgia	Asia	0.60	383.4	06	228.2	06	…	…	42.3%	ESB	78.9%	ESB	44.8%	ESB
Germany	Europe	0.11	698.1	06	74.2	06	19%	EU ICS	3.2%	ESB	51.3%	ESB	3.8%	ESB
Guatemala	Americas	0.09	311.6	00	27.5	00	…	…	…	…	…	…	…	…
Hong Kong SARC	Asia	0.43	341.4	06	148.2	06	58%	ICVS	…	…	…	…	…	…
Hungary	Europe	0.12	979.4	04	120.6	04	29%	EU ICS	4.8%	ESB	38.2%	ESB	3.9%	ESB
Iceland	Europe	0.03	881.4	04	30.6	04	16%	ICVS	…	…	…	…	…	…
Israel	Asia	0.38	578.4	06	219.3	06	…		…	…	…	…	…	…
Italy	Europe	0.19	336.1	06	64.8	06	24%	EU ICS	18.0%	ESB	15.4%	ESB	4.6%	ESB
Japan	Asia	0.82	67.8	06	55.4	06	55%	ICVS	…	…	…	…	…	…
Kazakhstan	Asia	1.33	213.0	06	282.6	06	…	…	…	…	…	…	…	…
Kyrgyzstan	Asia	0.92	255.2	06	235.7	06	…	…	…	…	…	…	…	…
Latvia	Europe	0.48	438.9	06	212.2	06	…	…	22.7%	ESB	34.6%	ESB	28.3%	ESB
Lithuania	Europe	0.52	384.0	06	198.2	06	…	…	…	…	…	…	…	…
Luxembourg	Europe	0.04	958.6	02	37.7	02	16%	EU ICS	…	…	…	…	…	…
Malaysia	Asia	0.52	321.4	06	166.4	00	…	…	…	…	…	…	…	…
Mauritius	Africa	0.09	1431.6	04	132.9	06	…	…	…	…	…	…	…	…
Mexico	Americas	0.72	135.3	06	97.2	02	70%	ICVS	…	…	…	…	…	…
Mongolia	Asia	0.66	301.9	06	200.7	06	…	…	…	…	…	…	…	…
Myanmar	Asia	0.08	33.5	02	2.5	02	…	…	…	…	…	…	…	…
Nepal	Asia	1.06	10.6	06	11.2	02	…	…	…	…	…	…	…	…
Netherlands	Europe	0.05	747.9	06	40.1	06	32%	EU ICS	1.8%	ESB	7.7%	ESB	0.9%	ESB
New Zealand	Oceania	0.05	2474.9	00	126.3	02	40%	ICVS	…	…	…	…	…	…
Northern Ireland	Europe	0.03	1513.7	06	51.2	06	53%	ICVS	2.5%	ESB	66.7%	ESB	4.5%	ESB
Norway	Europe	0.18	303.3	06	54.0	05	29%	ICVS	…	…	…	…	…	…
Panama	Americas	0.96	140.8	06	134.5	06	…	…	…	…	…	…	…	…
Papua New Guinea	Oceania	10.29	3.8	00	38.8	00	…	…	…	…	…	…	…	…
Philippines	Asia	6.38	6.1	06	38.6	06	…	…	…	…	…	…	…	…
Poland	Europe	0.15	1284.9	06	197.5	06	34%	ICVS	5.9%	ESB	46.6%	ESB	11.8%	ESB
Portugal	Europe	0.14	658.8	06	91.7	06	15%	EU ICS	5.1%	ESB	32.7%	ESB	19.1%	ESB
Qatar	Asia	0.14	423.1	00	57.2	04	…	…	…	…	…	…	…	…
Republic of Korea	Asia	0.14	450.8	04	63.1	06	…	…	…	…	…	…	…	…
Republic of Moldova	Europe	0.60	335.3	06	202.1	06	…	…	…	…	…	…	…	…
Romania	Europe	0.52	263.2	06	138.1	06	…	…	27.1%	ESB	91.6%	ESB	50.2%	ESB
Russian Federation	Europe	0.78	807.0	00	629.7	00 [1]	…	…	…	…	…	…	…	…
Saudi Arabia	Asia	0.20	273.1	02	53.9	02	…	…	…	…	…	…	…	…
Scotland	Europe	0.10	1090.0	05	111.5	06	49%	ICVS	2.7%	ESB	24.0%	ESB	1.1%	ESB
Singapore	Asia	0.88	292.7	00	258.3	06	…	…	…	…	…	…	…	…
Slovakia	Europe	0.23	478.0	06	111.5	06	…	…	5.1%	ESB	16.4%	ESB	5.9%	ESB
Slovenia	Europe	0.11	430.3	06	46.2	06	…	…	8.9%	ESB	41.7%	ESB	9.9%	ESB
Swaziland	Africa	0.12	1291.0	00	156.9	06	…	…	…	…	…	…	…	…
Sweden	Europe	0.05	1313.4	06	63.1	06	33%	EU ICS	2.5%	ESB	13.8%	ESB	0.9%	ESB
Switzerland	Europe	0.03	1496.7	06	43.1	06	12%	ICVS	1.2%	ESB	12.5%	ESB	0.4%	ESB
Syrian Arab Republic	Asia	0.04	420.9	03	17.1	04	…	…	…	…	…	…	…	…
TFYR Macedonia	Europe	0.17	496.8	06	86.1	06	…	…	…	…	…	…	…	…
Thailand	Asia	0.17	961.9	06	163.3	06	…	…	…	…	…	…	…	…
Turkey	Europe	0.03	1306.1	06	36.5	06	53%	ICVS [3]	1.4%	ESB	…	…	…	…
Turkmenistan	Asia	1.08	181.5	06	195.4	06	…	…	…	…	…	…	…	…
Ukraine	Europe	0.83	345.2	06	285.6	06	…	…	…	…	…	…	…	…

United Arab Emirates	Asia	0.07	1934.1	06	143.2	06	…	…	…	…	…	…	…	…
United Kingdom	Europe	0.04	2388.1	02	106.3	02	…	…	…	…	…	…	…	…
Uruguay	Americas	0.80	146.8	00	118.1	04	…	…	…	…	…	…	…	…
Venezuela	Americas	2.18	17.6	00	38.3	02	…	…	…	…	…	…	…	…
Zambia	Africa	4.59	18.6	00	85.5	00	…	…	…	…	…	…	…	…
Zimbabwe	Africa	0.40	276.8	04	109.7	04	…	…	…	…	…	…	…	…
Median		0.23	384.0		86.1									
Mean		0.92	710.9		119.4									
Standard deviation		2.56	1005.3		105.5									
Greece	Europe	…	…	…	65.3	06	30%	EU ICS	5.9%	ESB	…	…	…	…
Ireland	Europe	…	…	…	58.5	06	38%	EU ICS	…	…	…	…	…	…
Mozambique	Africa	…	…	…	…	…	42%	ICVS[6]	…	…	…	…	…	…
Peru	Americas	…	…	…	33.9	04	56%	ICVS[5]	…	…	…	…	…	…
South Africa	Africa	…	…	…	276.4	02	76%	ICVS[4]	…	…	…	…	…	…
Spain	Europe	…	…	…	106.9	04	17%	EU ICS	…	…	…	…	…	…
United States of America	Americas	…	…	…	552.7	02	47%	ICVS	…	…	…	…	…	…

Legend:
PR = Punitivity ratio; **PC** = Persons convicted per 100,000 population; **SIP** = Sentenced incarcerated persons per 100,000 population; **Y** = Reference year; **PPO** = Percentage of public voting for prison in case of recidivist burglar; **>1yAO** = Percentage of all offences punished with unsuspended prison sentences of more than one year; **>2yR** = Percentage of robbery offences punished with unsuspended prison sentences of more than two years; **>1yT** = Percentage of theft offences punished with unsuspended prison sentences of more than one year; **S** = Source.

Sources (other than UN-CTS):
ICVS = International Crime Victim Survey (data taken from van Dijk. van Kesteren and Smit 2007, 149); EU ICS = European Crime and Safety Survey (data taken from van Dijk, van Kesteren and Smit 2007, 149); ESB = European Sourcebook of Crime and Criminal Justice Statistics, 4th edition (Aebi et al. 2010).

Footnotes:
1 Total prison population instead of sentenced only.
2 Estimated value (only sanction range from one to under five years available).
3 Istanbul only.
4 Johannesburg only.
5 Lima only.
6 Maputo only.

Annex B to chapter 6: Methodological notes

Data validation

UN-CTS data were provided un-validated by the UN. Therefore, for the purposes of this chapter, a quality check was carried out on the data. All data from countries with less than 100,000 inhabitants were removed (with the exception of the results presented in Figure 1) because of the instability of these data due to the small absolute numbers.

Then, three types of checks were made, the first two of these routinely for all variables used: Trend check, internal validity check, other sources check. The internal validity check was always carried out after the trend check and therefore also after possible modifications due to this first check. Other sources were only checked for suspicious values and only where such other sources were available.

Trend check was a check for consistency of data within responses provided all over the reference period of this publication (6th to 10th UN-CTS). It was mainly looked for significant "jumps" in the time series between adjacent UN-CTS waves. Where a gap in the time series existed since a country did not respond to all waves, the trend check was still carried out. However, the acceptable thresholds for fluctuations were adapted in such a case.

Internal validity check was a check for:

1.) Extreme, implausible outliers in the responses from the different countries, i.e. values totally outside the acceptable and expectable variation of a certain variable.

2.) Consistency of data within responses provided to different questions of the UN-CTS. The following consistency checks were routinely made for chapter 7:

a) Prosecution personnel per police personnel: This ratio was expected to be far smaller than 1. This rule was never violated.

b) Judges per police personnel: This ratio was expected to be far smaller than 1. This rule was never violated.

c) Juvenile prison staff by adult prison staff: This ratio was expected to be smaller than 1. This rule was never violated.

c) Persons prosecuted by persons suspected: This ratio was expected to be smaller than 1. If this rule was violated, data and trend for both variables were thoroughly checked. If the data seemed trustworthy except for the violation of this rule, this was accepted if the ratio was not much bigger than 1, because this might be explained by incomplete statistical recording at police level (e.g. restricted to certain offence types etc.) and other factors, such as time lags within the criminal justice process.

d) Persons brought before court by persons suspected: This ratio was expected to be smaller than 1. Violations were handled as under 2.c).

e) Persons convicted by persons suspected: This ratio was expected to be smaller than 1. Violations were handled as under 2.c).

f) Persons convicted by persons prosecuted: This ratio was expected to be smaller than 1. Violations were handled as under 2.c).

g) Persons convicted by persons brought before court: This ratio was expected to be smaller than 1. Violations were not accepted.

h) Pre-trial detainees by total prison population: This ratio was expected to be smaller than 1. Violations were not accepted.

i) Sentenced prisoners by total prison population: This ratio was expected to be smaller than or equal to 1. Violations were not accepted.

j) Pre-trial detainees plus sentenced prisoners by total prison population: This ratio was expected to be equal to or moderately lower than 1. Violations were accepted in both directions, if not too extreme, for lower ratios already due to the existence of other categories ("convicted awaiting sentence" and "other") in the UN-CTS data, for higher ratios due to possible overlapping between both categories and / or double counts.

k) Adult prisoners by total prison population: This ratio was expected to be smaller than or equal to 1. Violations were not accepted in principle. However, in the case of very small differences (excess of less than 10 %) these were allowed if the data were plausible in all other respects, because the differences might be due to different sources or reference dates for these data.

l) Juvenile prisoners by total prison population: This ratio was expected to be far smaller than 1. This rule was never violated.

m) Adult prisoners plus juvenile prisoners by total prison population: This ratio was expected to be equal to 1. Violations were sometimes accepted: Lower values are possible in general due to the fact that the breakdown by adults and juveniles might refer to *sentenced* prisoners only in some countries. Higher values than 1 are more problematic and can only be explained by differences in statistical recording. These have only been accepted if the excess was lower than 10 % and the data were plausible in all other respects.

When a suspected inconsistency was found, a decision had to be made as to how to deal with it. Basically there were three possibilities:

- The suspected value was replaced by another value for the same variable and the same year, but from another source.

- The suspected value was replaced by another value for the same variable from another year if more consistent figures could be found within the UN-CTS data. This was only possible within the restrictions for the points in time as described below.

- The suspected value was removed without replacement.

Apart from the process described, values for a certain country that were missing in a UN-CTS survey wave were not added to the data from the other sources.

A complete listing of all inconsistencies found and the actions taken can be found in Annex C.

Latest available year and start / end year for trend analysis

If available, the year 2006 from the 10th survey was taken. Otherwise the latest available year was taken, provided this year was 2000 or later. Data from 1999 or earlier were not used for this data point.

In order to include as many countries as possible in trend analysis, trends were computed using only two points in time (start and end). The earliest starting date for trends was – different from most other chapters in this book – not 1996, but 1995, because resources variables were only covered for 1995 and 1997 in the 6th UN-CTS. The years 1995 (preferred) to 2001 were accepted as possible starting dates for trend analysis, whereas the years 2006 (preferred) back to 2000 were accepted as possible end dates. The end date for trend analysis is therefore always identical to the latest available year throughout chapter 7. The starting and end year can also be seen directly in the table, allowing the reader to interpret the results correctly. In trend tables there are always two values printed for each country which had at least two values available that could be considered as starting date and end date based on the rules above.

Average annual change rate

When presenting and comparing trends, the complication is that the period is not the same for every country: e.g. for some countries the 'start' year could be 1995 and the 'end' year 2006, for others this could be 2000 and 2004. To circumvent this, the mean *annual* change was computed with the following formula:

If x_1 is the value at year t_1 and x_2 the value at year t_2 (with $t_2 > t_1$), the mean annual change is:

$$(x_2 / x_1)^{1/(t_2 - t_1)} - 1$$

This mean annual change was computed between the 'start' and 'end' (for most countries 1995 – 2006). But of course it would be useless to calculate an average annual change rate with only one or two years in between these dates. Therefore, annual average change rates were only calculated if (end year - start year >= 3).

Summary measures in figures and tables

When computing figures per regions and sub-regions the non-weighted median was calculated. This means that the rates of large and small countries have equal weight when calculating the median. The choice was made to facilitate comparison of crime rates between countries without taking into account the size of the country. The disadvantage of the method is that one cannot exactly estimate the overall picture of criminal justice in different regions. Accurate and complete regional comparisons are, however, impossible because not all countries have responded to the UN-CTS.

Calculation of medians was done partially on the regional and partially on the sub-regional level, based on the available number of observations. In general, medians were not calculated for a sub-region if there were only three or less reporting countries there. There were some exceptions from this rule where this was necessary in order to separately show the results for other sub-regions within the same region with more than three reporting countries.

In order to document the restrictions for the interpretation of medians, but still be able to report as differentiated as possible, the total n values for each region / sub-region were included in the figure. Sometimes, medians were even calculated for only two values, where considered necessary (e.g. for Oceania not to lose it completely). In order to avoid misinterpretations, in these cases these two countries were explicitly listed directly in the figure.

The lines "1st Quartile", "Median" and "3rd Quartile" in the other figures refer to the non-weighted Quartiles (1st, 2nd, 3rd) of the respective ratio (e.g. in figure 6: suspects per police officer).

Most tables feature the following summary measures: median, mean, and standard deviation. As with the medians calculated for the figures by regions and sub-regions, these measures are calculated without weighting them by population. Since these summary measures refer to the total of responding countries, this decision was necessary in order to avoid the misinterpretation that the total medians, means and standard deviations would represent "the world" in total.

Annex C to chapter 6: Data modifications

The following modifications only refer to variables that were analyzed for chapter 7, not to other variables, also not to those solely used for the purposes of internal validity checks.

If a value is listed to have been *deleted*, it is explicitly noted if it has been replaced by a value from another source or from the UN-CTS, but from outside the usual time range. However, it is not explicitly listed if it has been replaced by a value from an adjacent UN-CTS in accordance with the general selection rules as described in Annex B. Such values have been automatically selected as replacement values if they were within the general range for start or end (= i.e.: latest available) year of trend analysis.

Police personnel

Azerbaijan: Trend check failed for 8th UN-CTS (2001 / 2002); deleted.
Belgium: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 2nd edition data for 1995 instead.
Chile: Trend check failed for 6th UN-CTS (1995 – 1997); deleted; used 5th UN-CTS data for 1994 (instead of 1995).
Costa Rica: Trend check failed; deleted 7th and 9th UN-CTS (1998 – 2000; 2005 / 2006).
Maldives: Trend check failed; deleted 6th and 8th UN-CTS (1995 – 1997; 2001 / 2002).
Mexico: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Spain: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 1st edition data for 1995 instead.
Turkey: Corrected typo in 2006 data.

Total number of persons suspected / arrested / cautioned

Austria: Trend and other sources check failed for 8th UN-CTS (2001 / 2002); deleted; used ESB 3rd edition data for 2001 instead.
England & Wales: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 2nd edition data for 1995 instead.
Greece: Trend and other sources check failed; deleted 7th and 10th UN-CTS (1998 – 2000; 2005 / 2006); deleted; used ESB 4th edition data for 2006 instead.
Latvia: Trend and other sources check failed; deleted 6th and 10th UN-CTS (1995 – 1997; 2005 / 2006); deleted; used ESB 4th edition data for 2005 / 2006 instead, but not ESB 2nd edition data for 1995 – 1997, because the latter values also failed trend check.
Malaysia: Trend check failed; deleted 6th and 10th UN-CTS (1995 – 1997; 2005 / 2006).
Morocco: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
Nepal: Trend check failed for 10th UN-CTS (2005 / 2006); deleted.
Occupied Palestine Territory: Trend check failed for 1995 value from 6th UN-CTS; deleted.
Panama: Trend check failed; deleted 6th and 7th UN-CTS (1995 – 1997; 1998 – 2000).
Paraguay: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
Singapore: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Spain: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 2nd edition data for 1995 instead.
Thailand: Trend check and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Venezuela: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.

Prosecution personnel

Argentina: According to 10th UN-CTS metadata, 2006 data only cover federal and Buenos Aires City personnel; excluded from comparison.
Bahrain: Internal validity check failed for 6th UN-CTS; deleted.
Chile: Trend check failed; deleted 7th and 8th UN-CTS (1998 – 2000; 2001 / 2002).
El Salvador: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
England & Wales: Trend check failed; deleted 7th and 8th UN-CTS (1998 – 2000; 2001 / 2002).
Georgia: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Malta: Trend and internal validity check failed for 2002 value from 8th UN-CTS; deleted.
Mexico: Trend and internal validity check failed for 1999 value from 7th UN-CTS; deleted.
Pakistan: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Peru: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Sri Lanka: Internal validity check failed for 9th UN-CTS (2003 / 2004); deleted.
Sweden: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 1st edition data for 1995 instead.

Total number of persons prosecuted

Chile: Trend check failed for 8th UN-CTS (2001 / 2002); deleted.
Cyprus: Trend and internal validity check failed for all survey waves; all deleted.
Ecuador: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006).
England & Wales: Trend check failed for 6th UN-CTS (1995 – 1997); deleted; internal validity check failed for 2001 value from 8th CTS.
Guatemala: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Ireland: Trend check failed for 10th UN-CTS (2005 / 2006); deleted.
Latvia: Trend check failed for 2006 value from 10th UN-CTS; deleted.
Malta: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Nepal: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Northern Ireland: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Republic of Moldova: Trend and internal validity check failed; deleted 8th and 9th UN-CTS values (2001 / 2002; 2003 / 2004).
Swaziland: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
United Arab Emirates: Internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
United States of America: Trend check failed for 10th UN-CTS (2005 / 2006); deleted.
Venezuela: Trend and internal validity check failed for 8th UN-CTS (2001 / 2002); deleted.
Zambia: Internal validity check failed for 7th UN-CTS (1998 - 2000); deleted.

Professional judges

Colombia: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Denmark: Trend check failed for 10th UN-CTS (2005 / 2006); deleted.
England & Wales: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Germany: Trend and other sources check failed; deleted 9th and 10th UN-CTS (2003 / 2004; 2005 / 2006); used data taken from the Federal Statistical Office in Germany for 2006 instead.
Maldives: Trend and internal validity check failed for all survey waves; all deleted.
Northern Ireland: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Pakistan: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Slovakia: Trend check failed for 10th UN-CTS (2005 / 2006); deleted.
United States of America: According to 10th UN-CTS metadata, 2005 / 2006 data only cover federal judges; excluded from comparison. Trend check also failed for 1997 value from 6th UN-CTS; deleted.

Total number of persons brought before the criminal courts

Afghanistan: Internal validity check failed for 8th UN-CTS (2001 / 2002); deleted.
Australia: Trend and internal validity check failed for all survey waves; all deleted.
Bahrain: Trend and internal validity check failed for all survey waves; all deleted.
Bolivia: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Colombia: Trend and internal validity check failed for all survey waves; all deleted.
Costa Rica: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Cyprus: Trend and internal validity check failed for all survey waves; all deleted.
Denmark: Trend check failed; deleted 6th to 9th UN-CTS (1995 – 1997; 1998 – 2000; 2001 / 2002; 2003 / 2004).
El Salvador: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
England & Wales: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Japan: Trend check failed; deleted 6th and 7th UN-CTS (1995 – 1997; 1998 – 2000).
Luxembourg: Internal validity check failed for 8th UN-CTS (2001 / 2002); deleted.
Malta: Trend and internal validity check failed for 9th UN-CTS (2003 / 2004); deleted.
Mauritius: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Myanmar: Internal validity check failed for 8th UN-CTS (2001 / 2002); deleted.
Northern Ireland: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Occupied Palestine Territory: Internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Saudi Arabia: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Sweden: Internal validity check failed for all survey waves; all deleted.
Turkey: Trend check failed for 8th UN-CTS (2001 / 2002); deleted.
Turkmenistan: Internal validity check failed; deleted 9th and 10th UN-CTS (2003 / 2004; 2005 / 2006).
United States of America: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Venezuela: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.

Total number of persons convicted

Chile: Trend and internal validity check failed; deleted 7th and 8th UN-CTS values (1998 – 2000; 2001 / 2002).
Colombia: Trend and internal validity check failed for all survey waves; all deleted.
Costa Rica: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Cyprus: Trend, internal validity and other sources check failed; deleted 7th to 10th; used ESB 4th edition data for 2006 instead.
Denmark: Trend check failed for 8th UN-CTS (2001 / 2002); deleted.
England & Wales: Trend and other sources check failed for 6th UN-CTS (1995 – 1997); deleted; used ESB 2nd edition data for 1995 / 1996 instead.
Malta: Internal validity check failed for 9th UN-CTS (2003 / 2004).
Mauritius: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Northern Ireland: Trend and other sources check failed; deleted 6th to 8th UN-CTS (1995 – 1997; 1998 – 2000; 2001 / 2002); used ESB 2nd edition data for 1995 / 1996 and 4th edition for the missing 2006 instead.
Sweden: Trend and other sources check failed; deleted 6th to 9th UN-CTS (1995 – 1997; 1998 – 2000; 2001 / 2002, 2003 / 2004); used ESB 2nd edition data for 1995 / 1996 instead.
Turkey: Trend check failed for 2002 value from 8th UN-CTS; deleted.

Total staff in adult prisons

Colombia: Trend check failed; deleted 6th and 7th UN-CTS (1995 – 1997; 1998 – 2000).
Ecuador: Trend check failed for 8th UN-CTS (2001 / 2002); deleted.
El Salvador: Trend and internal validity check failed for 10th UN-CTS (2005 / 2006); deleted.
Maldives: Trend and internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Mexico: Trend and internal validity check failed for all survey waves; all deleted.
Ukraine: Trend and internal validity check failed for 6th UN-CTS (1995 – 1997); deleted.

Total staff in juvenile prisons

Czech Republic: Trend check failed; deleted 7th to 9th UN-CTS (1998 – 2000; 2001 / 2002; 2003 / 2004).
Maldives: Trend and internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Mexico: Trend and internal validity check failed for all survey waves; all deleted.
Phillipines: Trend and internal validity check failed for all survey waves; all deleted.

Total number of persons incarcerated

Argentina: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Azerbaijan: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
Cyprus: Trend and other sources check failed; deleted 8th and 10th UN-CTS (2001 / 2002; 2005 / 2006); used ESB 4th edition data for 2006 instead.
Jordan: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Maldives: Internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Mauritius: Trend check failed; deleted 6th and 9th UN-CTS (1995 – 1997; 2003 / 2004).
Sri Lanka: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Swaziland: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.

Number of sentenced persons incarcerated

Argentina: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Cyprus: Trend and other sources check failed; deleted 8th and 10th UN-CTS (2001 / 2002; 2005 / 2006); used ESB 4th edition data for 2006 for the variables "total number of prisoners: stock" and "of which in pre-trial detention: stock" to calculate a replacement value.
Jordan: Trend check failed for 6th UN-CTS (1995 – 1997); deleted.
Kazakhstan: Trend check failed; deleted 6th and 7th UN-CTS (1995 – 1997; 1998 – 2000).
Kyrgyzstan: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
Latvia: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.
Maldives: Trend and internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Mauritius: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Morocco: Trend check failed for 9th UN-CTS (2003 / 2004); deleted.
Paraguay: Trend and internal validity check failed for 7th UN-CTS (1998 – 2000); deleted.
Phillipines: Trend and internal validity check failed; deleted 7th and 8th UN-CTS values (1998 – 2000; 2001 / 2002).
Swaziland: Trend check failed for 7th UN-CTS (1998 – 2000); deleted.