

Trends and observations on the collection, testing and use of blood and blood components in Europe

European Committee (Partial Agreement)
on Blood Transfusion ♦ CD-P-TS

2001-2008 report



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Summary

The work presented here is an attempt to provide information on trends in the collection, testing and use of blood and blood components in Europe. The basis for the analysis is data provided annually since 2001 to the Council of Europe by its Member States (MS). As of 2004, data collection and analysis has been performed under the aegis of the European Committee (Partial Agreement) on Blood Transfusion (CD-P-TS), a Steering Committee of the Council of Europe (CoE) supervising activities in the field of blood transfusion within the framework of the European Directorate for the Quality of Medicines and HealthCare (EDQM)¹. CD-P-TS strongly supported the analysis of trends in Europe, based on data provided during the reporting period 2001 to 2008 during which the proportion of responding countries was 73 % on average.

Data from countries that provided four or more annual observations were analysed together for the presence of an overall trend. Due to the stability of a proportion of responding countries, which facilitated robust statistical analyses, a number of observations could be made.

There were no overall trends found in the number of (first-time) donors, the number of donations and the use of red blood cells, indicating a stable blood supply overall. Nonetheless, there were some clear trends (both upwards and downwards) in individual MS. There was no trend in the number of plasma units used per inhabitant, nor was there a trend in the ratio of plasma or red blood cell (RBC) usage, in the amount of plasmapheresis plasma obtained per inhabitant, or in the amount of plasma obtained for fractionation per inhabitant. However, there was a very small increase in platelet use, as well as in the percentage of platelets obtained by apheresis. The data showed a clear increase in the use of irradiated and of leucocyte-depleted RBCs. A decrease was observed in the use of Whole Blood (WB) and autologous blood units. In addition, there was a decrease in the presence of Hepatitis B (HBV) and Hepatitis C (HCV) virus infections amongst both repeat and first-time donors. A small, but statistically significant, increase in the HIV incidence rate was found among repeat donors. Finally, an increasing number of MS reported that a maintained Quality Assurance (QA) system had been established.

It has been decided to pursue annual data collection and to produce an update of the trend analysis report every three years.

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The CoE and the authors are grateful to all colleagues and experts in MS who collated data at a national level and provided it for inclusion in this report, and especially to Prof Olof Akerblom for reviewing the initial versions of the questionnaire and Cees van der Poel for his continuous efforts to improve the datacollection process and reporting.

Data collection and analysis and preparation of this manuscript was co-ordinated by Dr Marie-Emmanuelle Behr-Gross (Scientific officer, EDQM), supported by Ms Catherine Mischler (Secretarial Assistant, EDQM) and by Ms Carole Knaup and Dr John O'Brien (Editorial Assistants, EDQM).

1. The EDQM is a Directorate of the Council of Europe, created in 1964 on the legal basis of the Convention on the Elaboration of a European Pharmacopoeia. Thirty-six member states, the European Union and 25 observers co-operate within this framework.

List of abbreviations

CD-P-TS	European Committee (Partial Agreement) on Blood Transfusion
CI	Confidence Intervals
CoE	Council of Europe
EC	European Commission
EDQM	European Directorate for the Quality of Medicines and HealthCare
EMA	European Medicines Agency
EU	European Union
FFP	Fresh Frozen Plasma
HBc	Hepatitis B core antigen
HBsAg	Hepatitis B surface Antigen
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HTLV	Human T cell Lymphotropic Virus
ID	Identification
ISBT	International Society for Blood Transfusion
IU	International Unit
L	Litres
MS	Member States of the Council of Europe
NAT	Nucleic Acid Amplification Techniques
Ph. Eur.	European Pharmacopoeia
QA	Quality Assurance
RBC	Red Blood Cells
SP-GS	Committee of Experts on Quality Assurance in Blood Transfusion Services
SP-HM	Committee of Experts on Blood Transfusion
WB	Whole Blood
WHO	World Health Organization

1. INTRODUCTION

Since 1989, the Council of Europe (CoE) had a tradition of collating data on the collection, testing and use of blood in its Member States (MS). Data were supplied by MS in response to a questionnaire requesting detailed information on donors, collections, testing, distribution and quality aspects of blood and blood components. Reports which have assessed the blood supply in the MS in 1989, 1991, 1993, 1995, and 1997 have been published. As of 2001, a new questionnaire has been designed by SP-GS experts and the SP-HM bureau focusing on data from blood establishments. It was felt that even though hospital data would have been very much of interest, these would be much more difficult to obtain systematically. The 2001 questionnaire stems from discussions that led to European Union (EU) *Directive 2002/98/EC*, which as a result of the *Treaty of Amsterdam* also primarily focuses on regulating the “producers” part of the blood transfusion chain. In contrast to the 1997 survey (Rejman *et al.*, 2000), since 2001, EU MS have been included in the survey. As in 2001, a new systematic approach and new definitions were developed, and a qualitative evaluation report on the 2001 Questionnaire, with recommendations for improvement of the process, was prepared and reported to SP-HM in 2003. Improvements and amendments have been included in the questionnaire following formal approval by the SP-HM bureau. As the new 2001 format could have generated initial difficulties in data retrieval, it was expected that the quality of the survey would improve through annual repetition. The consistency of the data during the last 5 years indicates that this may have been the case. If they were already established, existing definitions were used from regulatory documents of the CoE (*Guide to the preparation, use and quality assurance of blood and blood components*) and the EU (*Council Recommendation 98/463/EC* and *Directive 2002/98/EC*). Some definitions were established in the field. Infectious disease definitions were elaborated during an International Society for Blood Transfusion (ISBT) Working Party on Infectious Diseases in 1996 and, later, were adopted by the European Medicines Agency (EMA) (within the framework of the *Guideline on epidemiological data on blood transmissible infections*, EMEA/CPMP/BWP/3794/03). In this manner, greater convergence towards more uniform definitions and data collection within Europe could be sought. In the field, this means that data can be elicited consistently from blood bank automation systems without having to adapt different computer queries for different surveys. It is to be welcomed that the World Health Organization (WHO) Europe collaborated and also subscribed to the CoE questionnaire.

This report is the second trend analysis report on the outcome of these surveys, incorporating an additional three years to the previous report and now reporting over an 8-year period. The goal is to provide further insights in developments in the blood transfusion chain in Europe.

2. MATERIALS AND METHODS

2.1. Methods for data collection

For the analyses presented in this report, the CoE data from the annual surveys on ‘The collection, testing and use of blood and blood products in Europe’ for the years 2001 through 2008 were used. Data from the original reports 2006 through to 2008 were added to the data that was reported in the first published trend analysis report, which reported over the period 2001-2005 (see reference list).

2.2. Methods for statistical analysis

Changes in the reported characteristics over time are derived from the newly-constructed tables. A trend can to some extent be identified from the graphical representation of the results. However, statistical tests were performed to provide an objective identification of a trend for each individual country, as well as for an overall trend. Also, the magnitude of the trend, expressed in a rate of change per year, is assessed and reported.

In some cases, observations were classified as outliers, and discarded in the trend analyses. Observations were classified as outliers whenever this seemed reasonable in the context of the complete data series reported. Obviously, in some instances it is difficult to judge whether deviant observations are the result of erratic processes or erroneous data collection or entry. All observations classified as outliers are presented in a bold typeface in the tables. Outlier observations are discarded in the trend analyses, but included in the graphs showing the reported data.

2.2.1. Testing for a trend for a specific country

Testing for trends can be performed either by parametric or non-parametric statistical tests. For a parametric test, in contrast to a non-parametric test, a (mostly linear) relationship is presumed between time (T) and the outcome considered (Y). In addition, assumptions are commonly made on the distribution of the residuals, which is the difference between the prediction of the statistical model and the actual observed outcome. For non-parametric tests, no such assumptions are required, and these can therefore be applied to a wider class of observations. If the actual situation departs –even to a small extent– from the parametric assumptions, then the Mann-Kendall procedures will either perform as well as or better than parametric tests (Hirsch *et al.*, 1991; Onoz *et al.*, 2002). Therefore, in this report only the non-parametric test for trends was used. However, the drawback of non-parametric tests, is their reduced statistical power in comparison to (valid) parametric tests.

Only countries that reported data from four or more years are included in the trend analyses.

2.2.1.1. Non-parametric Mann-Kendall test for trend

Mann first suggested using the Kendall’s tau significance test for association as a test for trend (Mann, 1945), by simply using one of the variables as time and the other as the actual observed outcomes at various time points. The Mann-Kendall test can be stated most generally as a test for situations where observed values (Y) over time (T) tend to increase or decrease (monotonic change). The hypothesis tested is the following:

$$H_0: \text{Prob } [Y_j > Y_i] = 0.5, \text{ where time } T_j > T_i.$$

$$H_1: \text{Prob } [Y_j > Y_i] \neq 0.5 \text{ (2-sided test).}$$

No assumption of normality is required, but there must be no serial correlation for the resulting *p*-values to be correct. If a monotonic transformation such as the scale of powers is applied, the test statistic will remain identical to that obtained in the original units.

To perform the test, Kendall's S statistic is computed from the [T,Y] data pairs. The null hypothesis of no change is rejected when S (and therefore Kendall's tau of Y versus T) is significantly different from zero. It is then concluded that there is a monotonic trend in Y observed values over time.

2.2.1.2. Estimation the rate of change over time

The Mann-Kendall test indicates the presence of a trend, but does not provide any indication of the magnitude of change over time. Sen's slope estimator is used to estimate the median slope (Sen, 1968). The median slope of the inclinations found between all pairs of observations is taken, so that the estimator of a set of two-dimensional points (x_i, y_i) is the median m of the slopes $(y_j - y_i)/(x_j - x_i)$ determined by all pairs of sample points. This median estimate can be shown to be an unbiased estimator of the true slope by simple linear regression. For many distributions of the response error, this estimator has a high asymptotic efficiency relative to least-squares estimation. Estimators with low efficiency require more independent observations to attain the same sample variance of efficient unbiased estimators. Also, Sen's estimator is more robust than the least-squares estimator because it is much less sensitive to outliers.

2.2.2. Overall trend and rate of change

To test whether there is an overall trend, the observations from various countries have to be considered together. This can be performed in two different ways which are fundamentally different: the observations can either be weighted in accordance to the population size of the country or weighted equally. The first estimate reflects a trend amongst the European population, whereas latter reflects a trend amongst European MS. As the report aims to highlight trends amongst MS, trends are analysed using the data as reported (so no weighting is applied). Again, only countries that reported data from four or more years are included in the trend analysis.

For the statistical analysis of overall trends, the seasonal-/regional Mann-Kendall test is used (Helsel *et al.*, 2006), which is a straightforward extension of the individual Mann-Kendall test. A similar extension to Sen's slope estimator is used to estimate an overall median slope.

3. RESULTS

3.1. Introduction

This chapter starts with a description of the number of MS that responded to the questionnaire over the years. In the sections that follow, data tables, graphs and results of analyses are given for each of the tables from the individual annual CoE publications. The chapter finishes with an analysis of the total number of screening tests and QA implementation.

The tables with annual data per reporting MS contain three sections: country name, data provided per reporting year and an indication of the presence of a trend over time. Where data is provided that has been considered an outlier, this data is presented in a bold typeface. This data has not been used in the analysis for determining the presence of a trend.

The columns on the extreme right of the data tables (under the header 'Trend'), contain the sub-headers 'p-value' and 'Slope'. The first of these columns refers to the p -value for the Mann-Kendall test for trend. A p -value of 5 % means that there is a 5 % probability that, given that there is no trend (*i.e.* the null hypothesis is true), a test statistic at least as extreme as the one that was actually observed would have been obtained. The p -values indicated are positive for positive trends and negative for negative trends. Also, p -values are rounded up to values of 10 %, 5 % and 1 % to indicate a weak, strong or very strong indication for the presence of a trend. It was decided to show all trends with a p -value of 10 % or less, against standard statistical practice where, commonly, only p -values of 5 % or less are considered statistically significant. The reason for doing so is that less noticeable trends are highlighted for individual countries, even though the statistical significance of these trends might not otherwise have been sufficient for them to be labelled as such. However, only overall trends with a p -value less than 5 % are reported. The other column under the header 'Trend' provides an estimate for the slope of the trend whenever a trend exists (*i.e.* a p -value of 10 % or less for individual MS).

The bottom row of each table provides the annual estimates for the overall trend (the trend among MS). This is the median slope determined by applying Sen's method (see Chapter 2). The associated p -value is that for the extended Mann-Kendall test for trend, which indicates the presence of an overall trend. An estimate for the slope of the trend is provided whenever a trend exists, *i.e.* a p -value of 5 % or less. Whenever the slope is presented as a percentage, the slope is estimated on a logarithmic scale and the number given is the relative reduction or increase (in %) per annum.

All the data are also presented in a number of graphs. The first graph shows all the data as presented in the tables. Additional graphs are provided (whenever applicable) in which descending or ascending trends from the first graph are highlighted. In some of the graphs, the y -axis is scaled logarithmically. In these cases, any zeros reported in the data tables were omitted when generating the graphs, as zero values cannot be presented on a logarithmic scale. Conversely, in some of the logarithmic graphs, some data points are shown that are indicated as zeros (0.00) in the tables. This is due to the fact that numbers in the tables are written to a maximum of two decimal places. Please note that true zero values are presented without any decimals in the tables.

3.2. Number of responses

Out of the total of 46 MS, 19 completed and submitted a questionnaire for all years from 2001 through to 2008, thus providing 8 responses. Six MS provided 7 responses, two MS submitted 6 responses, two MS submitted 5 responses, nine MS gave 4 responses, three MS provided 3 responses and three MS submitted data from only one year. Two MS did not provide any data. The distribution of the number of reporting years is presented graphically in Figure 1. Overall, 83 % (n=38/46) of MS provided data for 4 or more years.

Table 1 shows the response per country per year. The proportion of respondents, as well as the total number of respondents and the total number of MS are presented in this table. From Table 1 it is clear that the highest response rate was observed in 2001. There is no significant trend in the relative number of responses over the years.

It should be noted that both Serbia and Montenegro joined in 2002 and reported combined data up until 2004. From 2005 onwards, Montenegro provided its own data. Considering the fact that the population size of Serbia is roughly ten times that of Montenegro, the data from the combined countries for the reporting years 2002 through 2004 have been assigned to the data provided by Serbia.

No data could be obtained for Liechtenstein as blood transfusion activities are run by operators acting under the responsibility of control authorities from neighbouring countries.

Similar agreements may be in place between Andorra, San Marino and their respective neighbouring countries, thus accounting for the lack of reports from these countries.

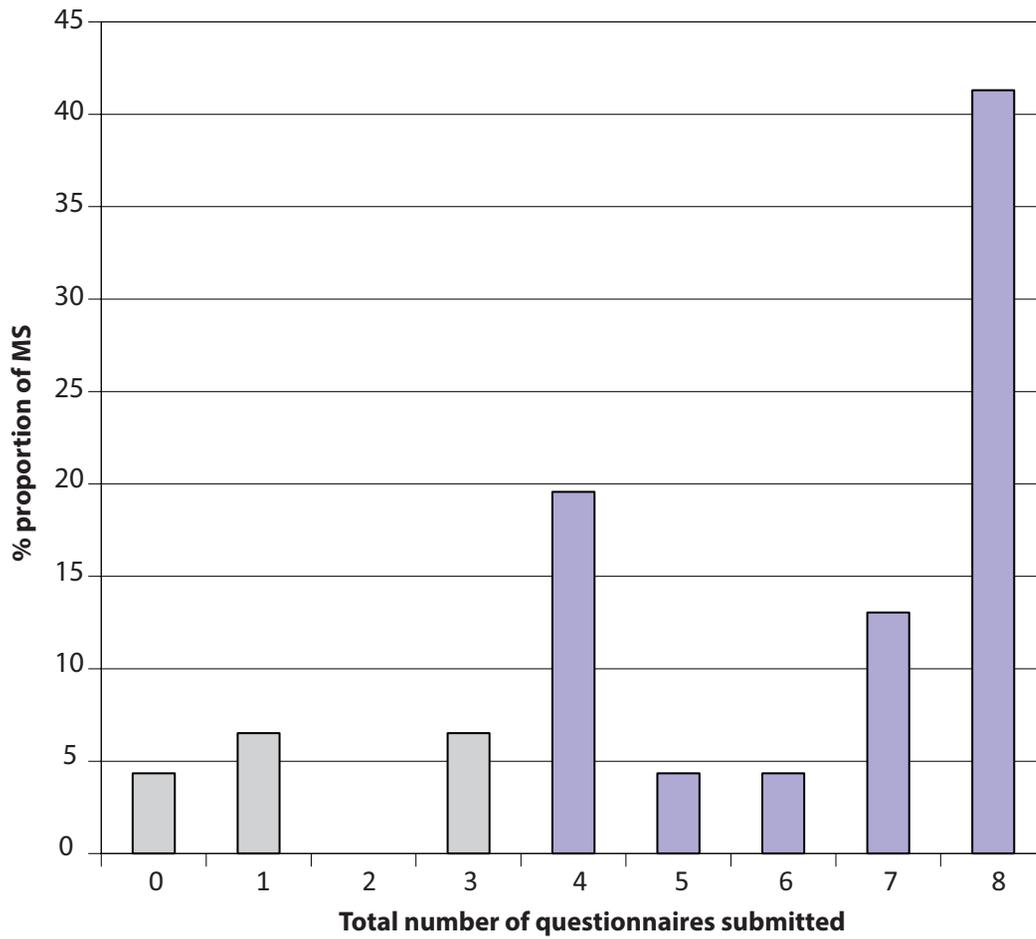


Figure 1 - Distribution of number of questionnaires submitted

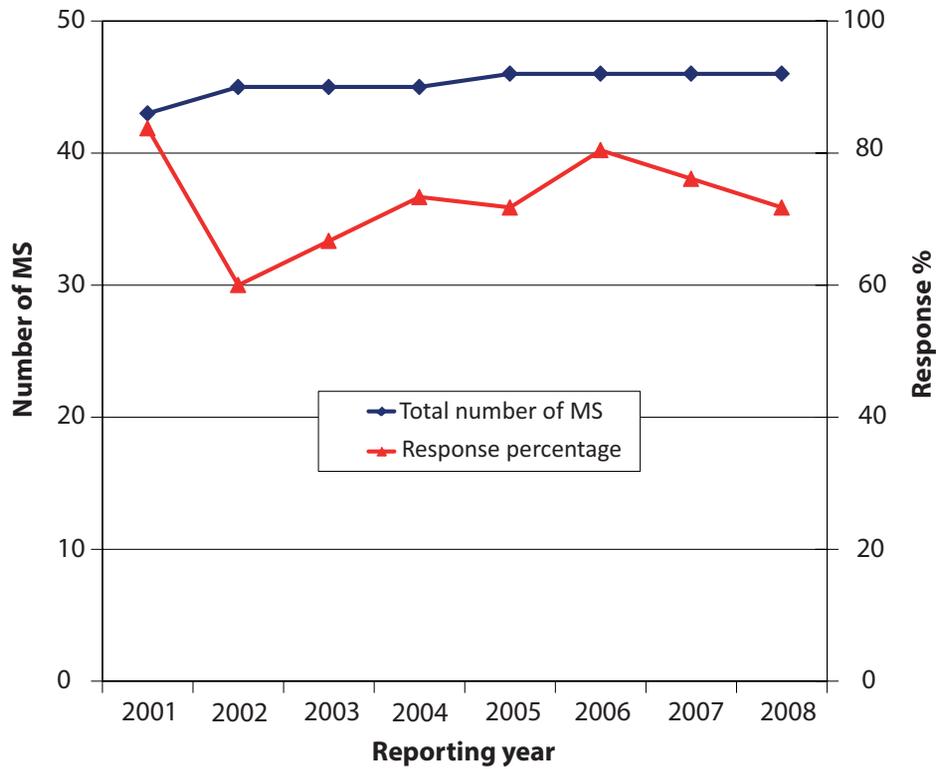


Figure 2 - Number of member states and response rate per year

Table 1 – Responses per member state per year

Country	Year								Total responses
	2001	2002	2003	2004	2005	2006	2007	2008	
Belgium									8
Bulgaria									
Croatia									
Czech Republic									
France									
Germany									
Greece									
Iceland									
Italy									
Latvia									
Luxembourg									
Netherlands									
Norway									
Poland									
Romania									
Slovak Republic									
Slovenia									
Sweden									
Switzerland									
Denmark								7	
Finland									
Georgia									
Hungary									
Ireland									
United Kingdom									
Azerbaijan									
Lithuania								6	
Serbia									
Spain								5	
Austria									
Bosnia/Herzegovina								4	
Cyprus									
Estonia									
FYR Macedonia									
Malta									
Moldovia									
Montenegro									
Portugal									
Andorra									
Armenia									
Turkey								3	
Albania									
Russian Federation									
Ukraine								1	
Liechtenstein									
San Marino								0	
Number responding	36	27	30	33	33	37	35	33	Average values
Total number MS	43	45	45	45	46	46	46	46	
% responding	84%	60%	67%	73%	72%	80%	76%	72%	

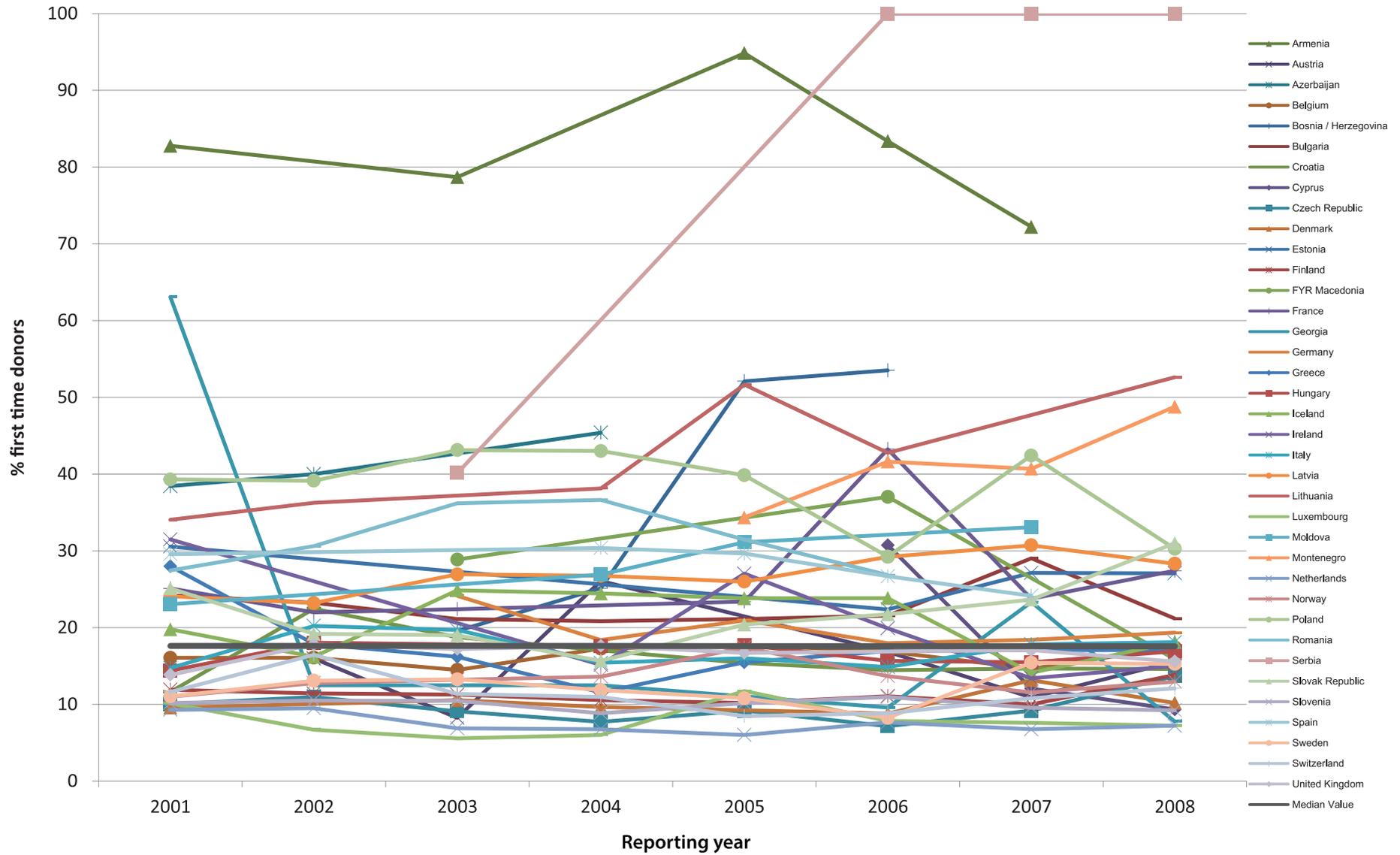
Data obtained 
No data obtained 
Not a member state 

Data excluded from trend analysis

3.3. Percentage first time donors

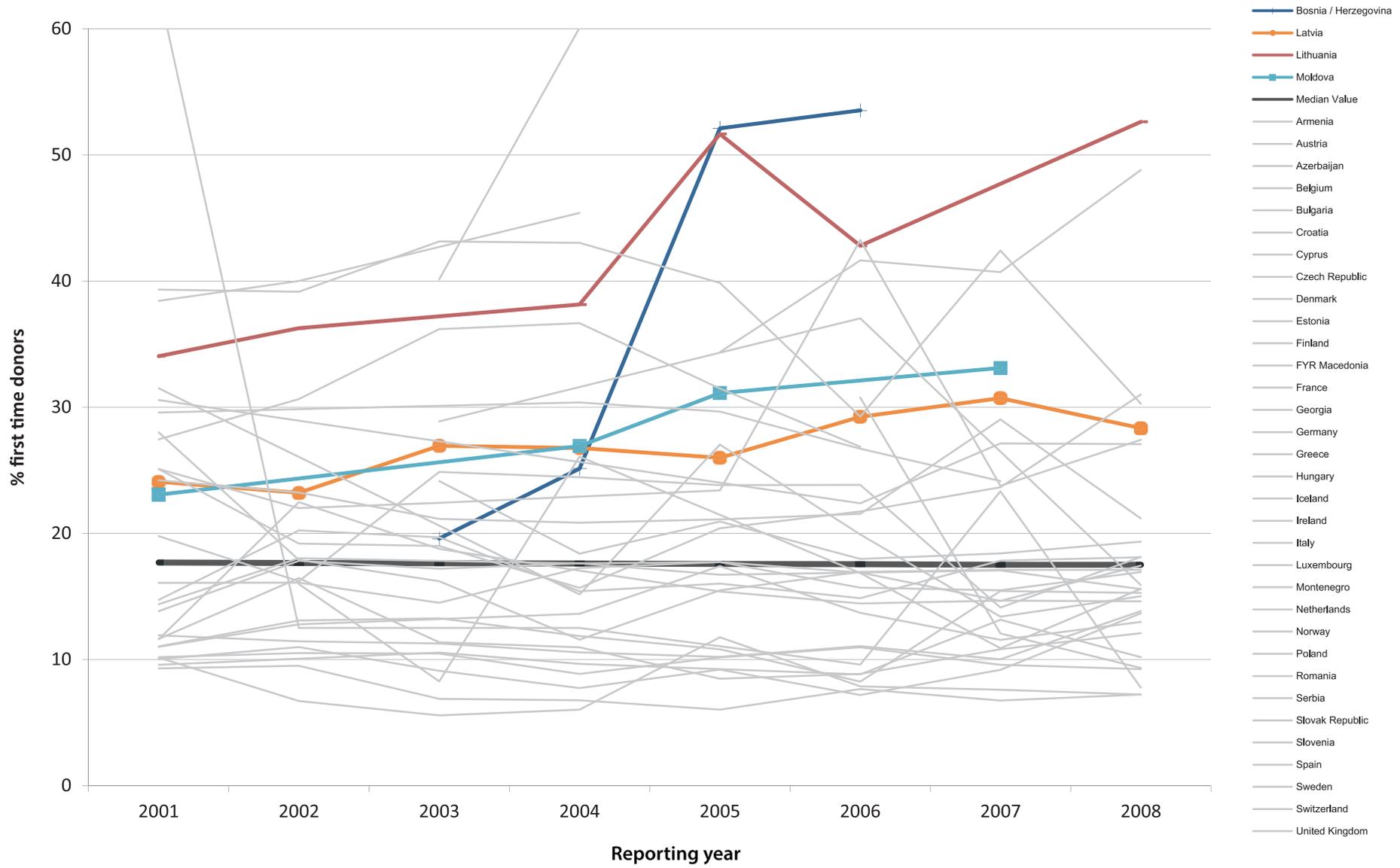
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	75									
Andorra		6								
Armenia	83		79		95	83	72		-	-
Austria		16	8.3	26		17	11	16	-	-
Azerbaijan	38	40		45						
Belgium	16	16	14	17	18	17	15	17	-	-
Bosnia / Herzegovina			20	25	52	54			10%	13
Bulgaria	24	23	21	21	21	22	29	21	-	-
Croatia	12	22	19	17	15	14	15	15	-	-
Cyprus						31	12	9		
Czech Republic	10	11	9	8	9	7	9	14	-	-
Denmark	10		11	10		9	13	10	-	-
Estonia	31					22	27	27	-	-
Finland	12	11	11	11	10	11	10	14	-	-
FYR Macedonia			29			37		16		
France	25	22	22		23	43	24	27	-	-
Georgia	63	13	13	13		10	23	8	-	-
Germany			24	18	21	18	18	19	-	-
Greece	28	18	16	12	15	17	17	17	-	-
Hungary	14	18		18	18	16	15	17	-	-
Iceland	20	16	25	24	24	24	14	18	-	-
Ireland	32			15	27	20	13	15	-	-
Italy	15	20	20	15	16	15	18	18	-	-
Latvia	24	23	27	27	26	29	31	28	10%	1
Liechtenstein										
Lithuania	34	36		38	52	43		53	5%	2
Luxembourg	10	6.7	5.6	6.0	12	7.9	7.6	7.2	-	-
Malta							32	19		
Moldova	23			27	31		33		10%	2
Montenegro					34	42	41	49	-	-
Netherlands	9	10	7	7	6	8	7	7	-	-
Norway	11	13	13	14	17	14	12	13	-	-
Poland	39	39	43	43	40	29	42	30	-	-
Portugal	29					14				
Romania	27	31	36	37	31	27			-	-
Russian Federation				27						
San Marino										
Serbia			40			100	100	100	-	-
Slovak Republic	25	19	19	16	20	22	24	31	-	-
Slovenia	10	11	10	9	10	11	10	9	-	-
Spain	30			30	30	27	24		-	-
Sweden	11	13	13	12	11	8	15	15	-	-
Switzerland	12	16	11	11	8	9	11	12	-	-
Turkey										
Ukraine			28							
United Kingdom	14	18	17	18	17		17	16	-	-
Median value	17.8	17.8	17.7	17.6	17.6	17.5	17.4	17.4	-74%	

No data obtained



3.3.1:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 positive trends (Bosnia / Herzegovina, Latvia, Lithuania, Moldova), and no negative trends. There is no overall trend.



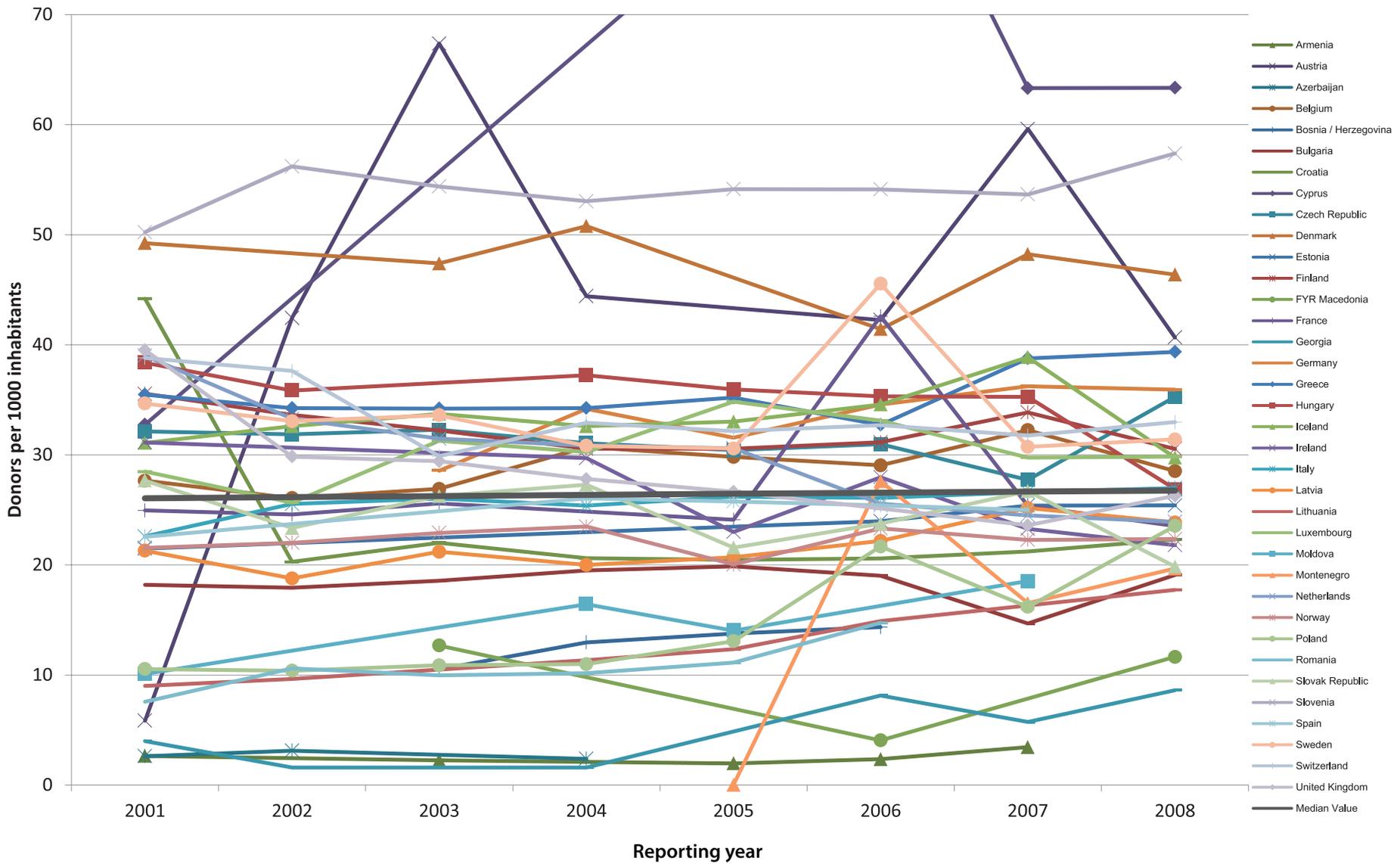
3.3.2:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 positive trends (Bosnia / Herzegovina, Latvia, Lithuania, Moldova). There is no overall trend.

3.4. Donors per 1000 inhabitants

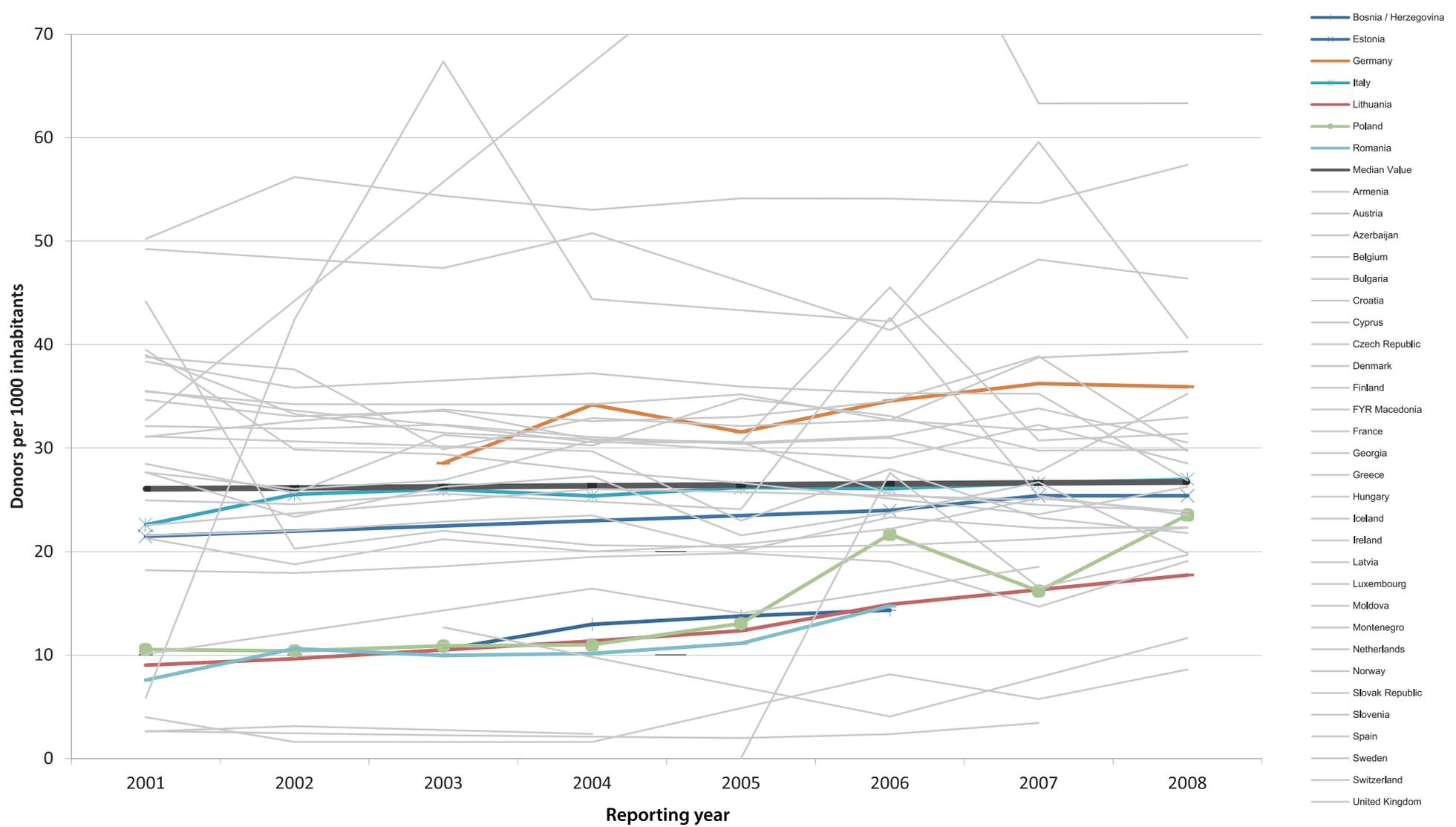
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		32								
Armenia	3		2		2	2	3		-	-
Austria	6	42	67	44		42	60	41	-	-
Azerbaijan	3	3		2						
Belgium	28	26	27	31	30	29	32	29	-	-
Bosnia / Herzegovina			11	13	14	14			10%	1.0
Bulgaria	18	18	19	19	20	19	15	19	-	-
Croatia	44	20	22	21	20	21	21	22	-	-
Cyprus	33					90	63	63	-	-
Czech Republic	32	32	32	31	30	31	28	35	-	-
Denmark	49		47	51		41	48	46	-	-
Estonia	21					24	25	25	10%	0.6
Finland	36	34	32	31	31	31	34	31	-	-
FYR Macedonia			13			4		12		
France	25	25	26		24	43	25	24	-	-
Georgia	4	2	2	2		8	6	9	-	-
Germany			29	34	32	35	36	36	10%	1.5
Greece	35	34	34	34	35	33	39	39	-	-
Hungary	38	36		37	36	35	35	27	-5%	-0.6
Iceland	31	33	34	33	33	35	39	30	-	-
Ireland	31			30	23	28	23	22	-10%	-1.3
Italy	23	26	26	25	26	26	27	27	1%	0.4
Latvia	21	19	21	20	21	22	25	24	-	-
Liechtenstein										
Lithuania	9	10		11	12	15		18	1%	1.2
Luxembourg	28	26	31	30	35	33	30	30	-	-
Malta							35	38		
Moldova	10			16	14		19		-	-
Montenegro					0	28	17	20	-	-
Netherlands	39	33	31	31	31	26	25	24	-1%	-1.9
Norway	22	22	23	23	20	23	22	22	-	-
Poland	11	10	11	11	13	22	16	24	1%	1.4
Portugal	11					28				
Romania	8	11	10	10	11	15			10%	1.0
Russian Federation				20						
San Marino										
Serbia			24				19			
Slovak Republic	28	23	26	27	22	24	27	20	-	-
Slovenia	50	56	54	53	54	54	54	57	-	-
Spain	23			26	26	25	25		-	-
Sweden	35	33	34	31	31	46	31	31	-	-
Switzerland	39	38	30	33	32	33	32	33	-	-
Turkey	16									
Ukraine			22							
United Kingdom	40	30	29	28	27		24	26	-1%	-1.4
Median value	26.2	26.3	26.4	26.4	26.5	26.5	26.6	26.7	24%	

No data obtained



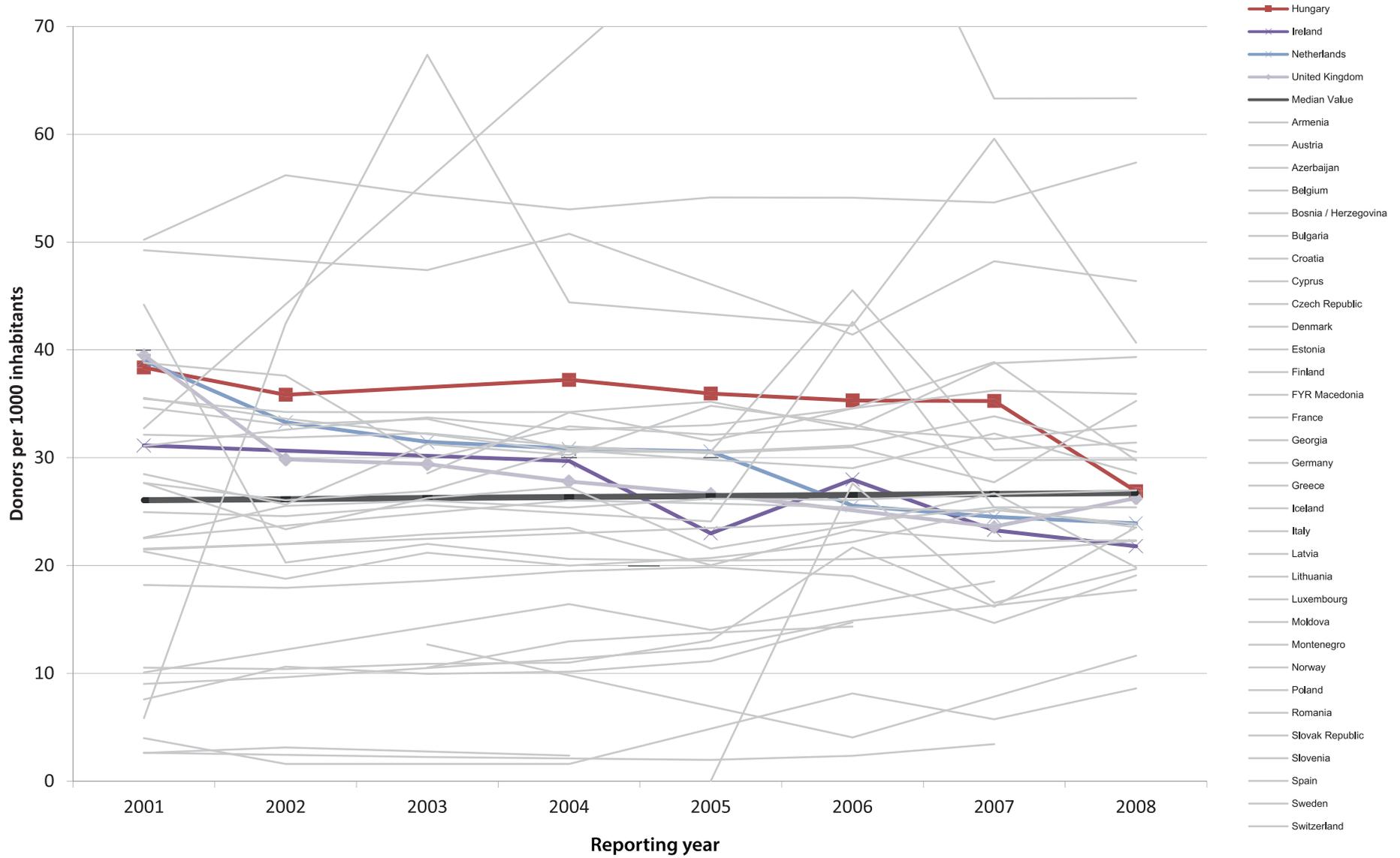
3.4.1:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 7 positive trends (Bosnia / Herzegovina, Estonia, Germany, Italy, Lithuania, Poland, Romania), and 4 negative trends (Hungary, Ireland, Netherlands, United Kingdom). There is no overall trend.



3.4.2:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 7 positive trends (Bosnia / Herzegovina, Estonia, Germany, Italy, Lithuania, Poland, Romania). There is no overall trend.

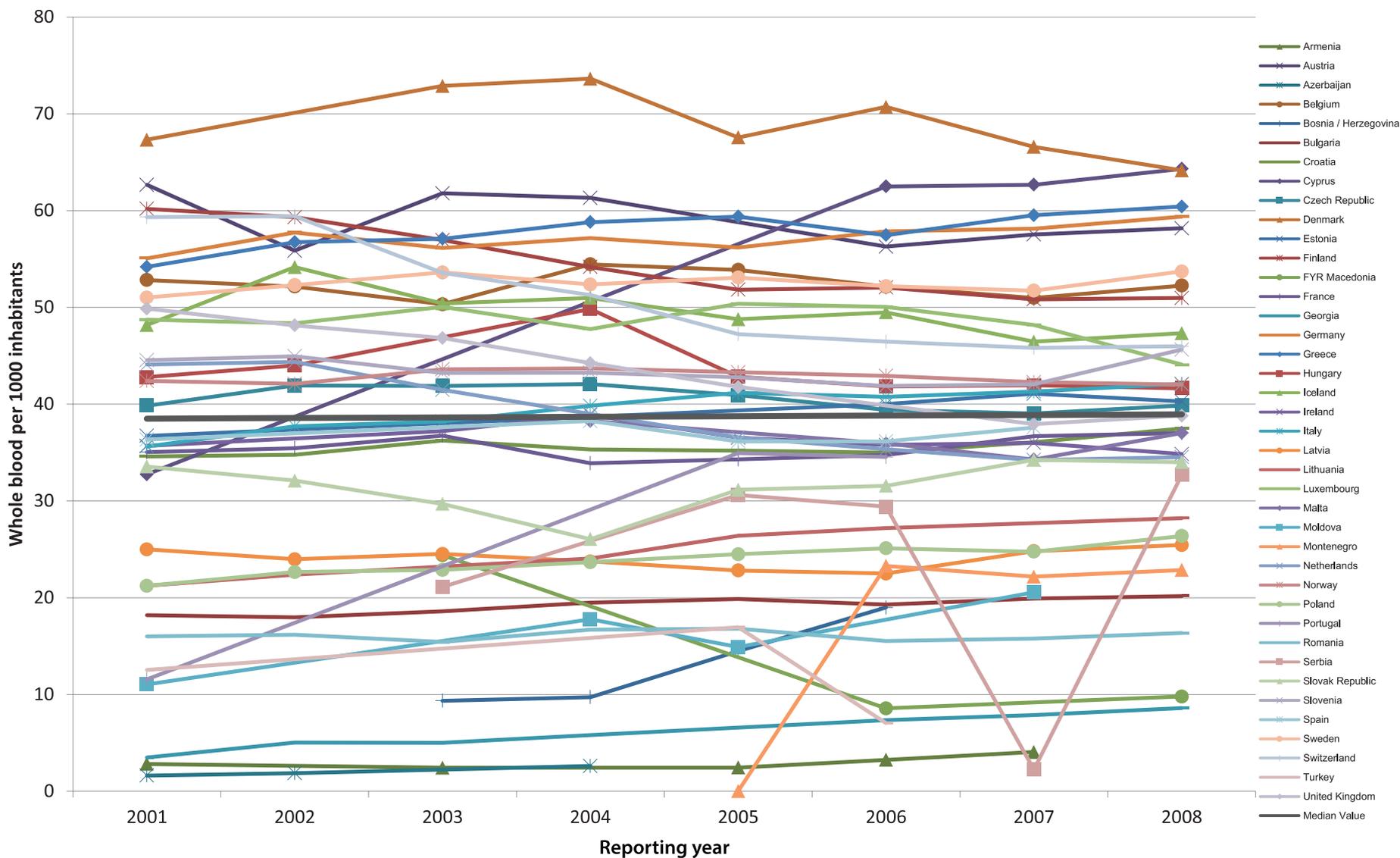


3.4.3: There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Hungary, Ireland, Netherlands, United Kingdom). There is no overall trend.

3.5. Whole blood donations per 1000 inhabitants

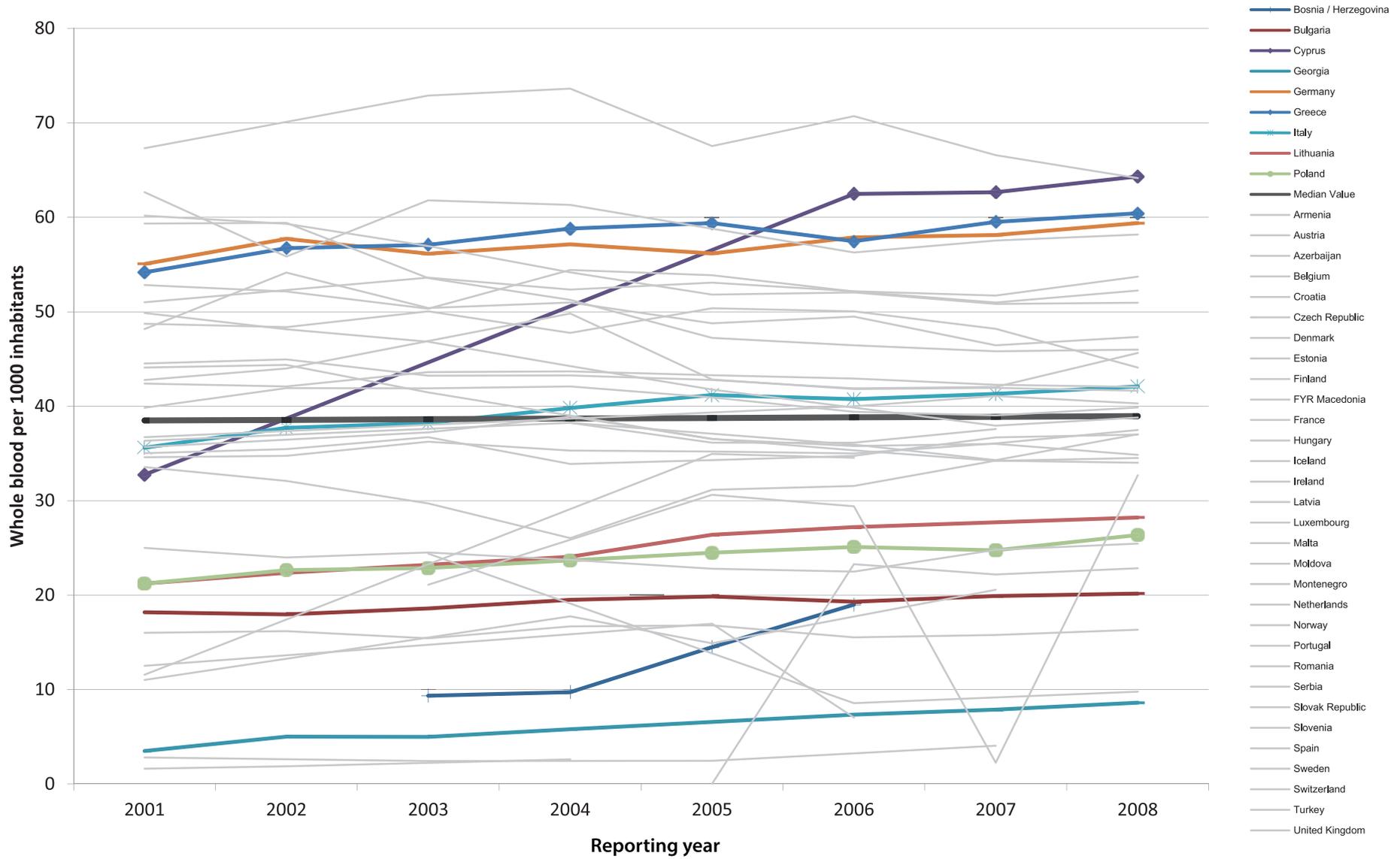
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		12								
Armenia	3		2		2	3	4		-	-
Austria	63	56	62	61		56	58	58	-	-
Azerbaijan	2	2		3						
Belgium	53	52	50	54	54	52	51	52		-
Bosnia / Herzegovina			9	10	14	19			10%	3.9
Bulgaria	18	18	19	19	20	19	20	20	1%	0.3
Croatia	35	35	36	35	35	35	36	37	-	-
Cyprus	33					62	63	64	10%	3.1
Czech Republic	40	42	42	42	41	39	39	40	-	-
Denmark	67		73	74	68	71	67	64	-	-
Estonia	37					40	41	40	-	-
Finland	60	59	57	54	52	52	51	51	-1%	-1.5
FYR Macedonia			24			9		10		
France	35	35	37	34	34	35	37	37	-	-
Georgia	4	5	5	6		7	8	9	1%	0.7
Germany	55	58	56	57	56	58	58	59	5%	0.5
Greece	54	57	57	59	59	57	60	60	1%	0.7
Hungary	43	44		50	43	42	42	42	-	-
Iceland	48	54	50	51	49	49	46	47	-	-
Ireland	36		37	39	37	36	36	35	-	-
Italy	36	38	38	40	41	41	41	42	1%	0.8
Latvia	25	24	25	24	23	23	25	25	-	-
Liechtenstein										
Lithuania	21	22		24	26	27		28	1%	1.0
Luxembourg	49	48	50	48	50	50	48	44	-	-
Malta				38		36	34	37	-	-
Moldova	11			18	15		21		-	-
Montenegro					0	23	22	23		
Netherlands	44	44	41	39	37	35	34	35	-1%	-1.7
Norway	42	42	44	44	43	43	42	42	-	-
Poland	21	23	23	24	24	25	25	26	1%	0.7
Portugal	12				35	35				
Romania	16	16	15	17	17	16	16	16	-	-
Russian Federation				0						
San Marino										
Serbia			21		31	29	2	33	-	-
Slovak Republic	34	32	30	26	31	32	34	34	-	-
Slovenia	45	45	43	43	43	42	42	46	-	-
Spain	36			38	36	36	38		-	-
Sweden	51	52	54	52	53	52	52	54	-	-
Switzerland	59	59	54	51	47	46	46	46	-1%	-2.3
Turkey	13				17	7				
Ukraine			18							
United Kingdom	50	48	47	44	42		38	39	-1%	-1.9
Median value	38.7	38.7	38.8	38.8	38.8	38.8	38.9	38.9	31%	

No data obtained



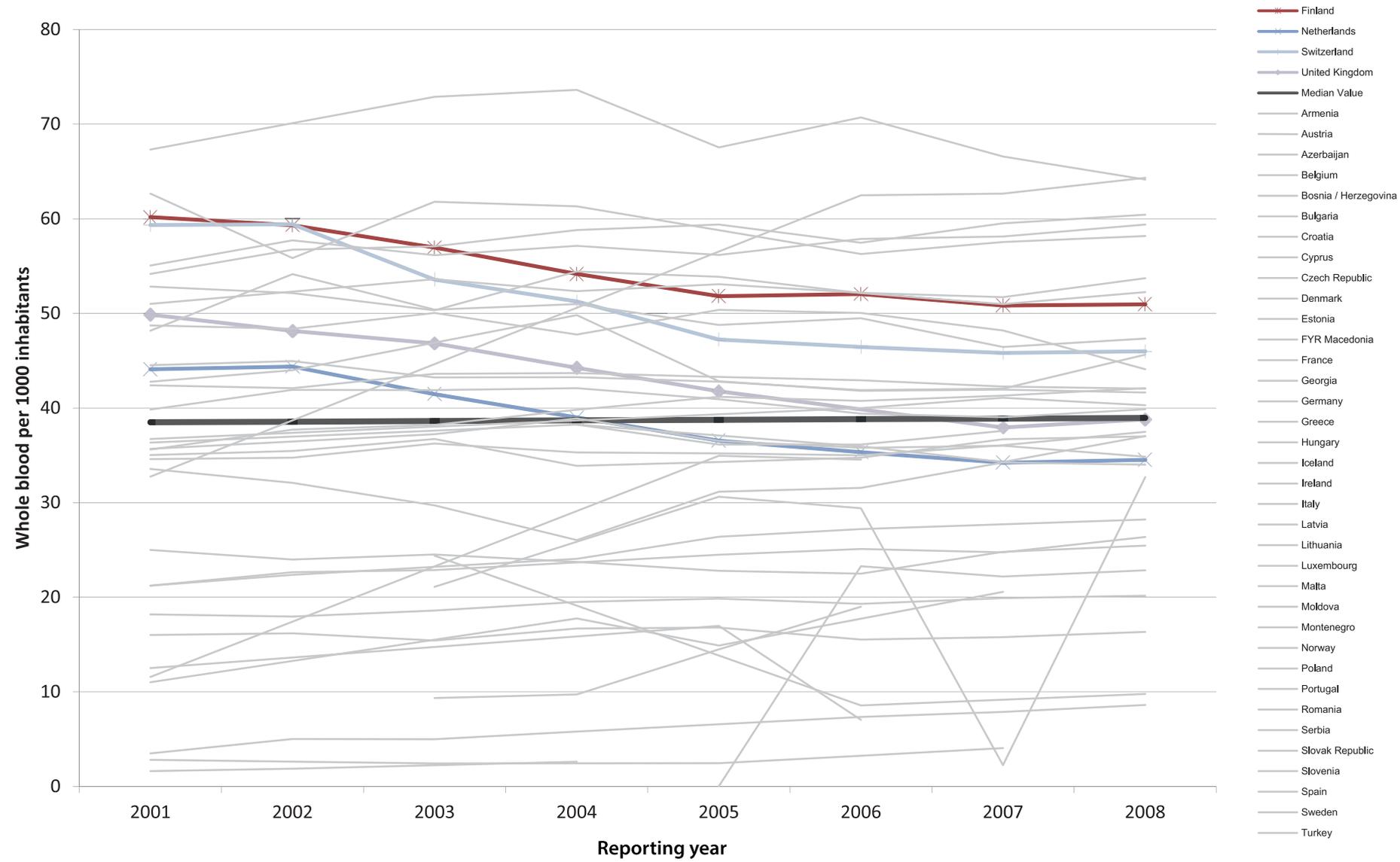
3.5.1:

There are 35 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 positive trends (Bosnia / Herzegovina, Bulgaria, Cyprus, Georgia, Germany, Greece, Italy, Lithuania, Poland), and 4 negative trends (Finland, Netherlands, Switzerland, United Kingdom). There is no overall trend.



3.5.2:

There are 35 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 positive trends (Bosnia / Herzegovina, Bulgaria, Cyprus, Georgia, Germany, Greece, Italy, Lithuania, Poland). There is no overall trend.



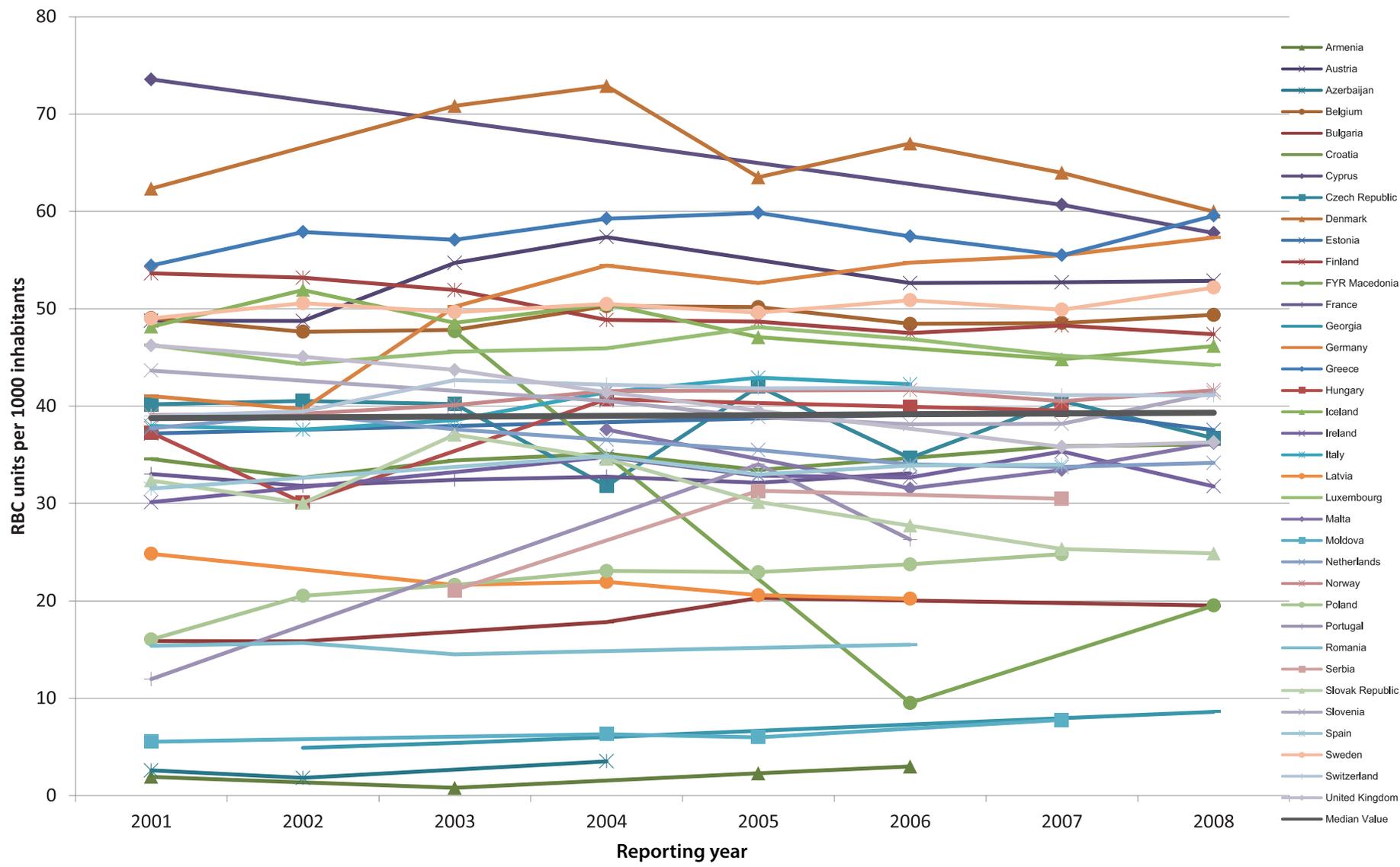
3.5.3:

There are 35 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Finland, Netherlands, Switzerland, United Kingdom). There is no overall trend.

3.6. RBC units per 1000 inhabitants

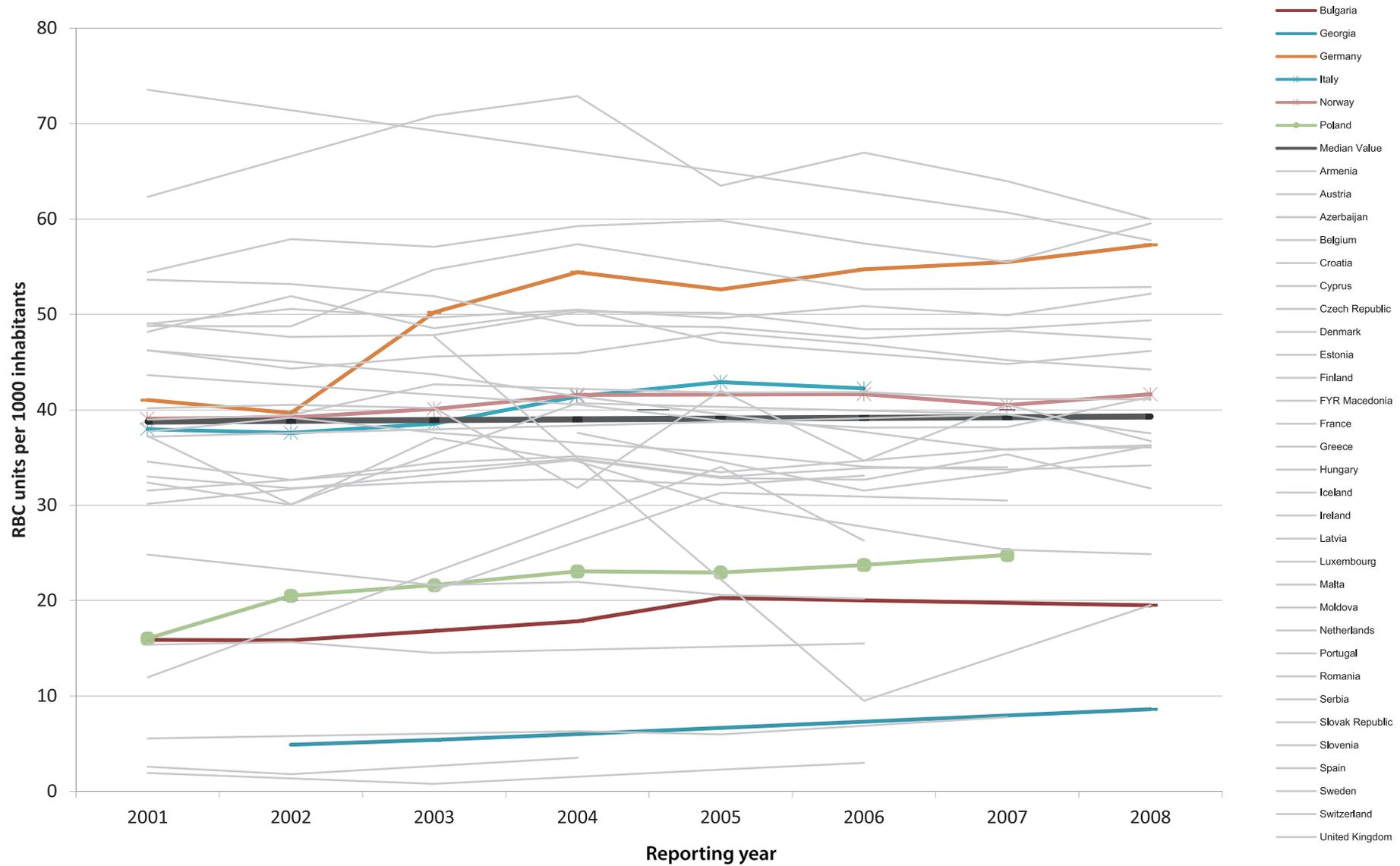
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		11								
Armenia	2		1		2	3			-	-
Austria	49	49	55	57		53	53	53	-	-
Azerbaijan	3	2		4						
Belgium	49	48	48	50	50	48	49	49	-	-
Bosnia / Herzegovina			9	9						
Bulgaria	16	16	17	18	20			20	10%	0.6
Croatia	35	33	34	35	33		36	36	-	-
Cyprus	74						61	58		
Czech Republic	40	41	40	32	42	35	41	37	-	-
Denmark	62		71	73	64	67	64	60	-	-
Estonia	37						40	38		
Finland	54	53	52	49	49	47	48	47	-1%	-0.9
FYR Macedonia			48			10		20		
France	33	32	32	33	32	33			-	-
Georgia		5	5	6				9	10%	0.6
Germany	41	40	50	54	53	55	55	57	1%	1.9
Greece	54	58	57	59	60	57	55	60	-	-
Hungary	37	30		41		40	40		-	-
Iceland	48	52	49	50	47		45	46	-	-
Ireland	30			35	33	33	35	32	-	-
Italy	38	38	39	41	43	42			10%	1.2
Latvia	25		22	22	21	20			-10%	-0.9
Liechtenstein										
Lithuania	18	44								
Luxembourg	46	44	46	46	48	47	45	44	-	-
Malta				38		32	33	36	-	-
Moldova	6			6	6		8		-	-
Montenegro							18			
Netherlands	38	39	38	37	35	34	34	34	-1%	-0.9
Norway	39	39	40	42		42	41	42	5%	0.4
Poland	16	21	22	23	23	24	25		1%	0.9
Portugal	12				34	26				
Romania	15	16	15			16			-	-
Russian Federation										
San Marino										
Serbia			21		31		30			
Slovak Republic	32	30	37	35	30	28	25	25	-5%	-1.6
Slovenia	44			41	39	38	38	41	-	-
Spain	32			35	33	34	34		-	-
Sweden	49	51	50	50	50	51	50	52	-	-
Switzerland	39	39	43	42	42	42	41	41	-	-
Turkey	12									
Ukraine			0							
United Kingdom	46	45	44	41	40		36	36	-1%	-1.7
Median value	38.8	38.9	38.9	39.0	39.0	39.1	39.1	39.2	44%	

No data obtained



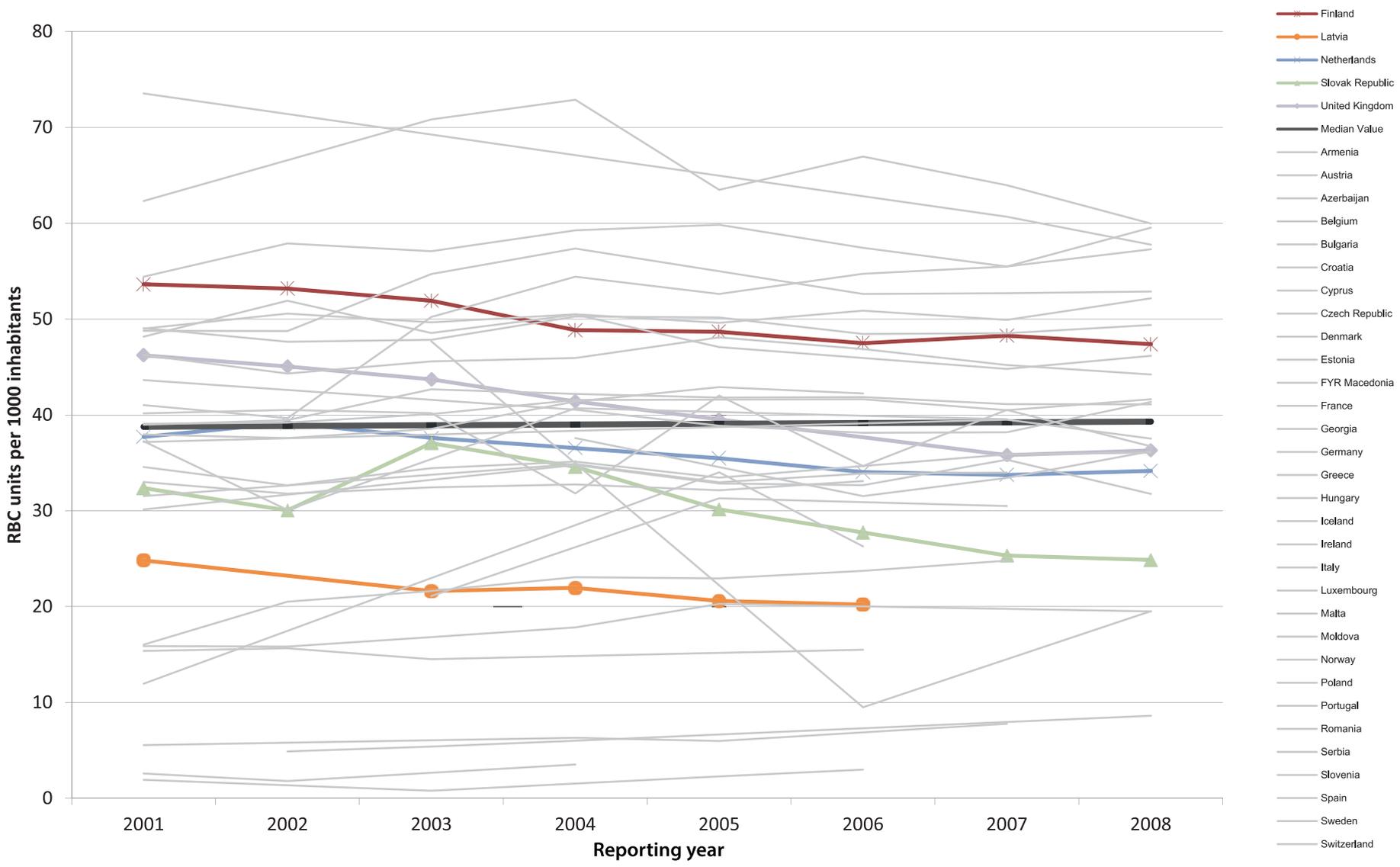
3.6.1:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 5 negative trends (Finland, Latvia, Netherlands, Slovak Republic, United Kingdom), and 6 positive trends (Bulgaria, Georgia, Germany, Italy, Norway, Poland). There is no overall trend.



3.6.2:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 6 positive trends (Bulgaria, Georgia, Germany, Italy, Norway, Poland). There is no overall trend.

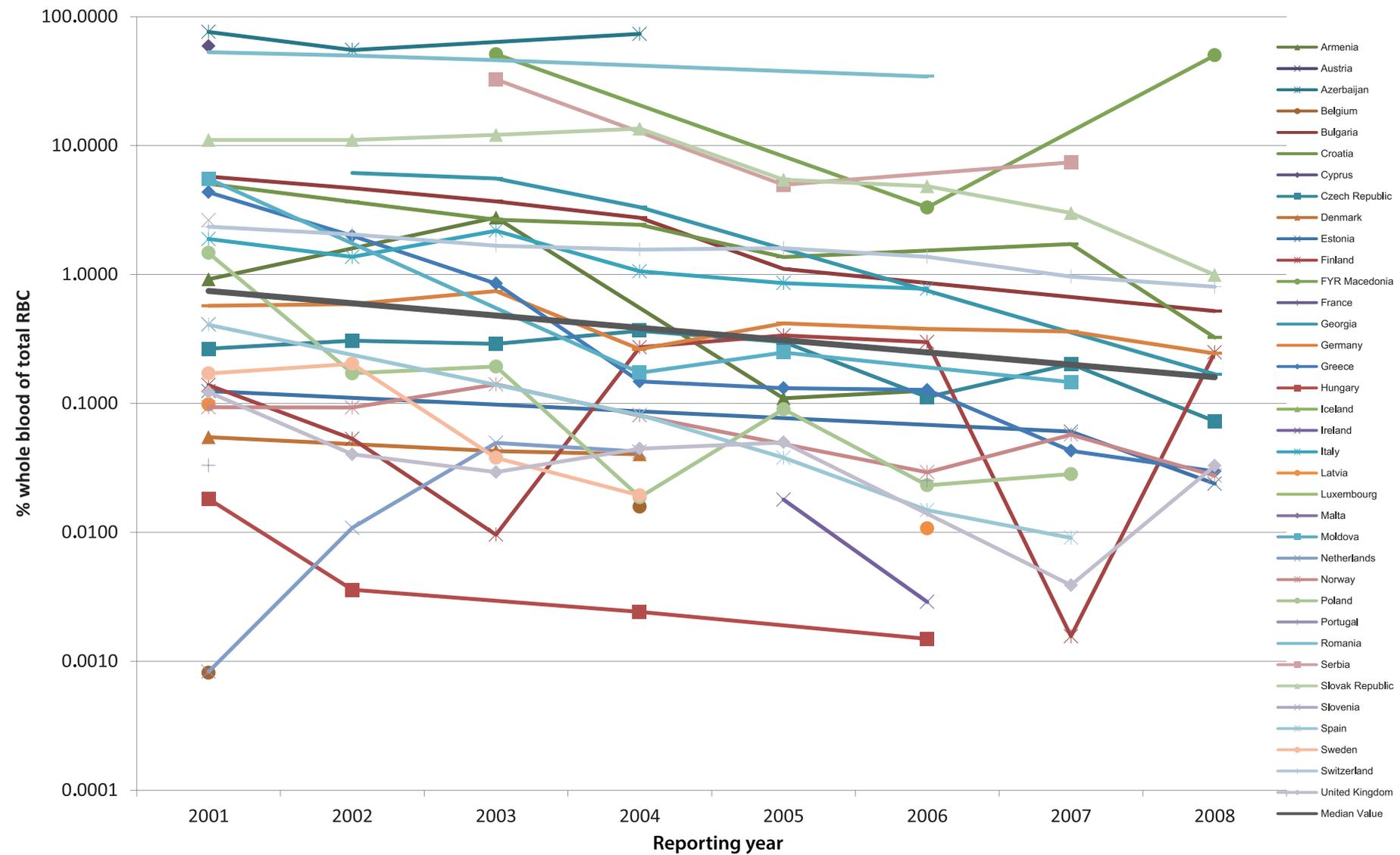


3.6.3: There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 5 negative trends (Finland, Latvia, Netherlands, Slovak Republic, United Kingdom). There is no overall trend.

3.7. Percentage whole blood used out of total RBC

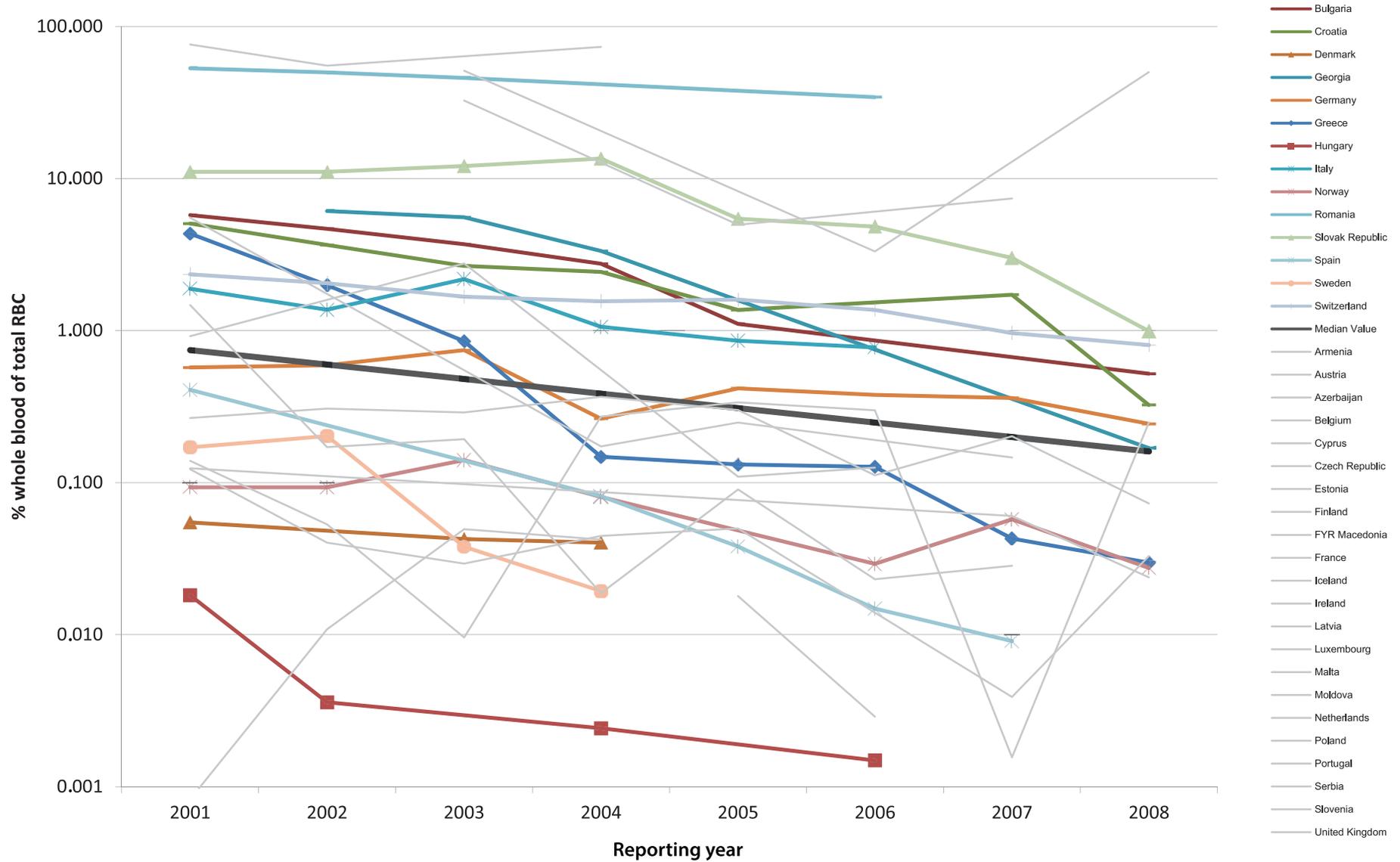
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	20.62									
Andorra		0								
Armenia	0.92		2.76		0.11	0.13			-	-
Austria	0	0	0	0		0	0	0	-	-
Azerbaijan	76.15	55.17		73.45						
Belgium	0.00	0	0	0.02	0	0	0	0	-	-
Bosnia / Herzegovina			24.36	36.90						
Bulgaria	5.74	4.67	3.69	2.75	1.11			0.52	-1%	-0.98
Croatia	5.05	3.66	2.67	2.43	1.36		1.72	0.32	-1%	-0.61
Cyprus	59.21						0	0		
Czech Republic	0.27	0.31	0.29	0.37	0.30	0.11	0.20	0.07	-	-
Denmark	0.05		0.04	0.04	0	0	0	0	-1%	-0.01
Estonia	0.12						0.06	0.02		
Finland	0.14	0.05	0.01	0.27	0.34	0.30	0.002	0.25	-	-
FYR Macedonia			51.15			3.31		50.14		
France	0	0	0	0	0	0			-	-
Georgia		6.12	5.56	3.33				0.17	-10%	-1.03
Germany	0.57	0.59	0.74	0.26	0.42	0.38	0.36	0.24	-10%	-0.05
Greece	4.35	1.99	0.85	0.15	0.13	0.13	0.04	0.03	-1%	-0.34
Hungary	0.02	0.00		0.00		0.00	0		-5%	0.00
Iceland	0	0	0	0	0		0	0	-	-
Ireland	0.41			0	0.02	0.00	0	0	-	-
Italy	1.89	1.37	2.18	1.06	0.86	0.78			-10%	-0.20
Latvia	0.10		0	0	0	0.01			-	-
Liechtenstein										
Lithuania	0.18	50.94								
Luxembourg	0	0	0	0	0	0	0	0	-	-
Malta				0		0	0	0	-	-
Moldova	5.52			0.17	0.25		0.15		-	-
Montenegro							20.58			
Netherlands	0.00	0.01	0.05	0.04	0	0	0	0	-	-
Norway	0.09	0.09	0.14	0.08		0.03	0.06	0.03	-5%	-0.01
Poland	1.47	0.17	0.19	0.02	0.09	0.02	0.03		-	-
Portugal	0.03				0	0.03				
Romania	53.09	49.93	45.92			34.34			-10%	-3.81
Russian Federation										
San Marino										
Serbia			32.55		4.97		7.40			
Slovak Republic	11.06	11.06	12.09	13.53	5.44	4.83	3.00	0.99	-5%	-1.58
Slovenia	2.63			0	0	0	0	0	-	-
Spain	0.41			0.08	0.04	0.01	0.01		-5%	-0.04
Sweden	0.17	0.20	0.04	0.02	0	0	0	0	-1%	-0.02
Switzerland	2.35	2.05	1.67	1.56	1.60	1.37	0.96	0.80	-1%	-0.20
Turkey	80.33									
Ukraine			9.48							
United Kingdom	0.12	0.04	0.03	0.04	0.05		0.00	0.03	-	-
Median value	0.74	0.59	0.48	0.39	0.31	0.25	0.20	0.16	-0.01%	80%

No data obtained



3.7.1:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 14 negative trends (Bulgaria, Croatia, Denmark, Georgia, Germany, Greece, Hungary, Italy, Norway, Romania, Slovak Republic, Spain, Sweden, Switzerland), and no positive trends. There is an overall negative trend.



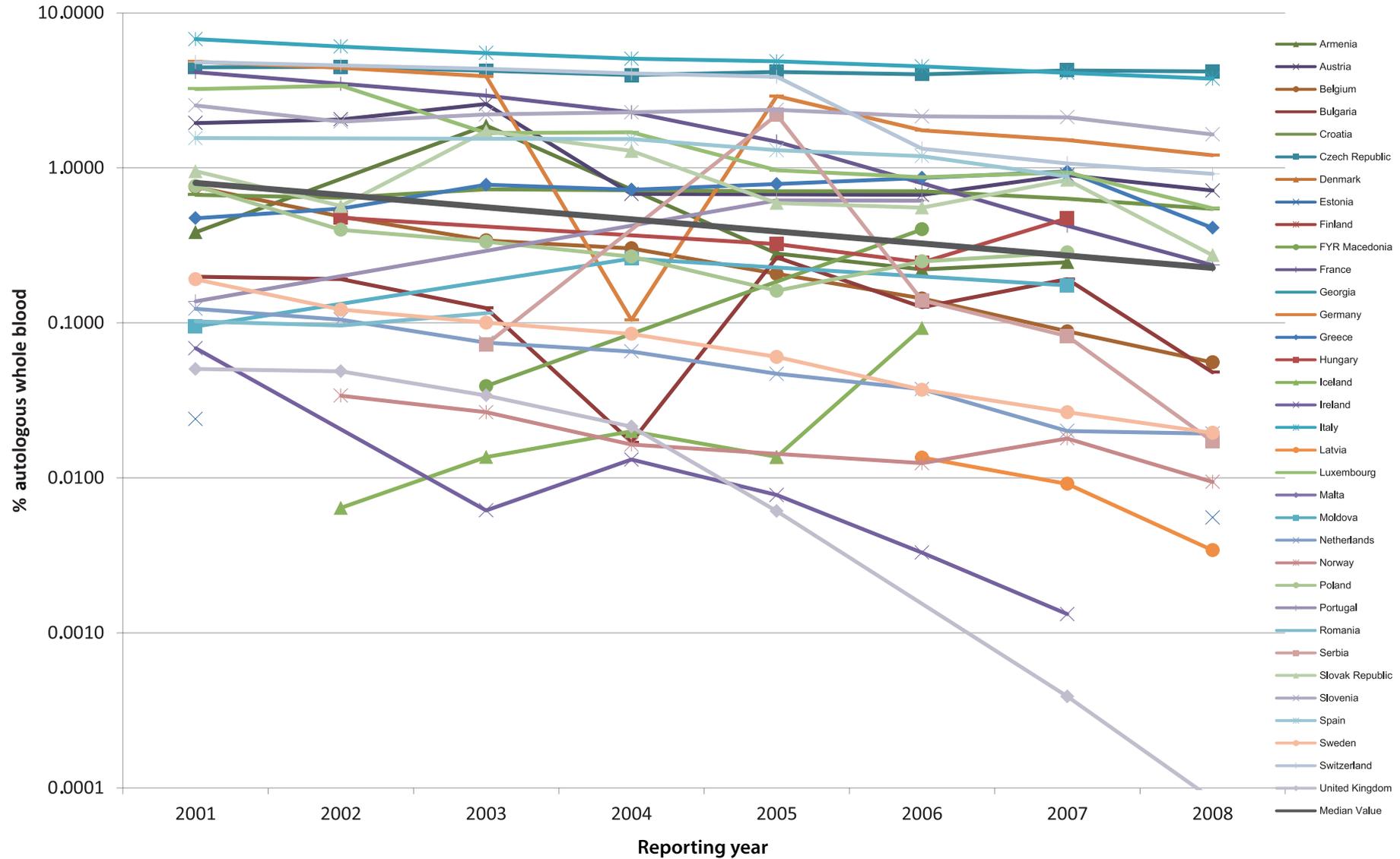
3.7.2:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 14 negative trends (Bulgaria, Croatia, Denmark, Georgia, Germany, Greece, Hungary, Italy, Norway, Romania, Slovak Republic, Spain, Sweden, Switzerland). There is an overall negative trend.

3.8. Percentage autologous out of total whole blood

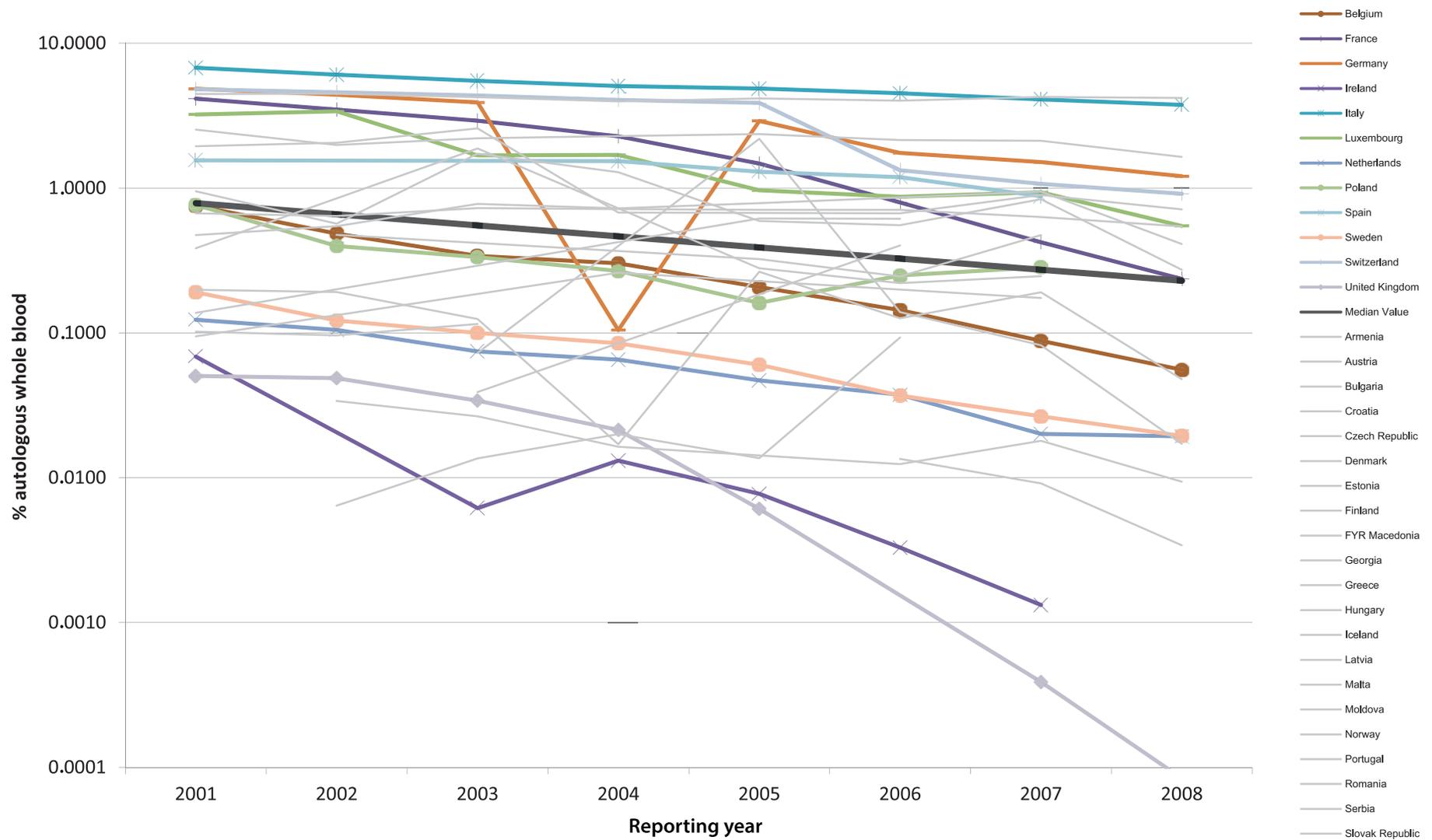
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	1.29									
Andorra		0								
Armenia	0.38		1.88		0.28	0.22	0.25		-	-
Austria	1.95	2.06	2.58	0.68		0.67	0.90	0.71	-	-
Azerbaijan		0		0						
Belgium	0.76	0.49	0.34	0.30	0.21	0.14	0.09	0.06	-1%	-0.08
Bosnia / Herzegovina			0.02	0.03						
Bulgaria	0.20	0.19	0.12	0.02	0.26	0.13	0.19	0.05	-	-
Croatia	0.67	0.64	0.73	0.72	0.71	0.71	0.63	0.54	-	-
Cyprus							0	0		
Czech Republic	4.46	4.49	4.24	3.97	4.16	4.02	4.26	4.19	-	-
Denmark	0				0.01	0	0	0	-	-
Estonia	0.02						0	0.01		
Finland	0	0	0	0	0	0	0	0	-	-
FYR Macedonia			0.04			0.40		0		
France	4.15	3.49	2.92	2.28	1.48	0.80	0.42	0.24	-1%	-0.62
Georgia	0			0				0		
Germany	4.84	4.42	3.90	0.10	2.91	1.75	1.51	1.21	-1%	-0.53
Greece	0.47	0.55	0.78	0.72	0.79	0.86	0.95	0.41	-	-
Hungary		0.48			0.32	0.25	0.47		-	-
Iceland	0	0.01	0.01	0.02	0.01	0.09	0	0	-	-
Ireland	0.07		0.01	0.01	0.01	0.00	0.00	0	-5%	0.00
Italy	6.78	6.07	5.51	5.06	4.86	4.51	4.10	3.76	-1%	-0.39
Latvia			0	0		0.01	0.01	0.00	-	-
Liechtenstein										
Lithuania										
Luxembourg	3.23	3.39	1.68	1.70	0.97	0.87	0.94	0.55	-1%	-0.38
Malta						0	0	0		
Moldova	0.09			0.26			0.17			
Montenegro							0.14			
Netherlands	0.12	0.10	0.07	0.07	0.05	0.04	0.02	0.02	-1%	-0.01
Norway	0	0.03	0.03	0.02		0.01	0.02	0.01	-	-
Poland	0.76	0.40	0.33	0.27	0.16	0.25	0.28	0	-5%	-0.07
Portugal	0.14				0.62	0.62				
Romania	0.10	0.10	0.12							
Russian Federation										
San Marino										
Serbia			0.07		2.19	0.14	0.08	0.02	-	-
Slovak Republic	0.95	0.57	1.73	1.29	0.59	0.55	0.84	0.27	-	-
Slovenia	2.53	1.99	2.21	2.28	2.36	2.15	2.12	1.65	-	-
Spain	1.56			1.53	1.30	1.19	0.88		-5%	-0.14
Sweden	0.19	0.12	0.10	0.08	0.06	0.04	0.03	0.02	-1%	-0.02
Switzerland	4.82	4.59	4.36	4.07	3.87	1.33	1.07	0.92	-1%	-0.58
Turkey										
Ukraine										
United Kingdom	0.05	0.05	0.03	0.02	0.01		0.0004	0.0001	-1%	-0.01
Median value	0.82	0.68	0.56	0.47	0.39	0.32	0.27	0.22	-0.01%	83%

No data obtained



3.8.1:

There are 27 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 negative trends (Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Poland, Spain, Sweden, Switzerland, United Kingdom), and no positive trends. There is an overall negative trend.



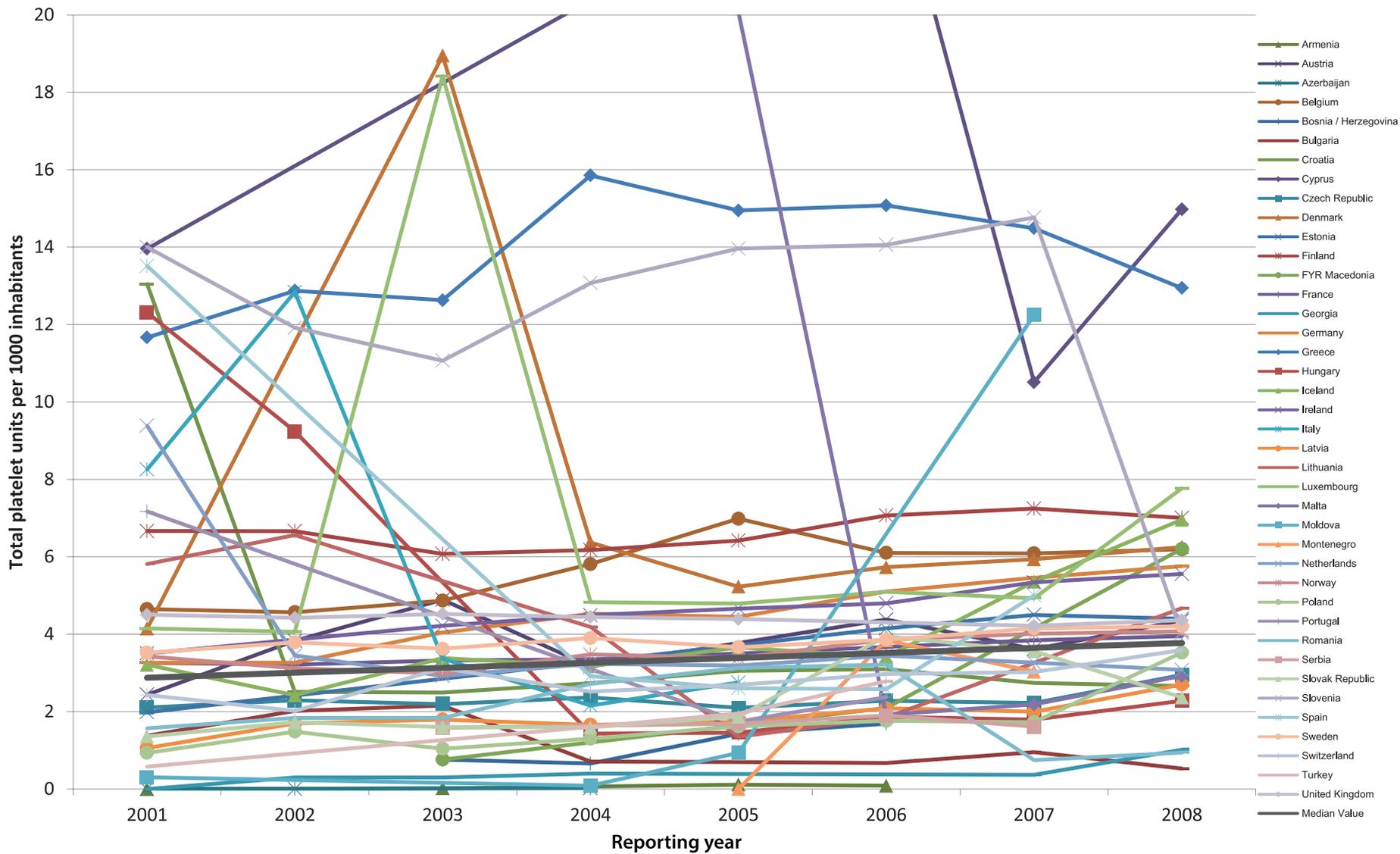
3.8.2:

There are 27 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 negative trends (Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Poland, Spain, Sweden, Switzerland, United Kingdom). There is an overall negative trend.

3.9. Platelets per 1000 inhabitants

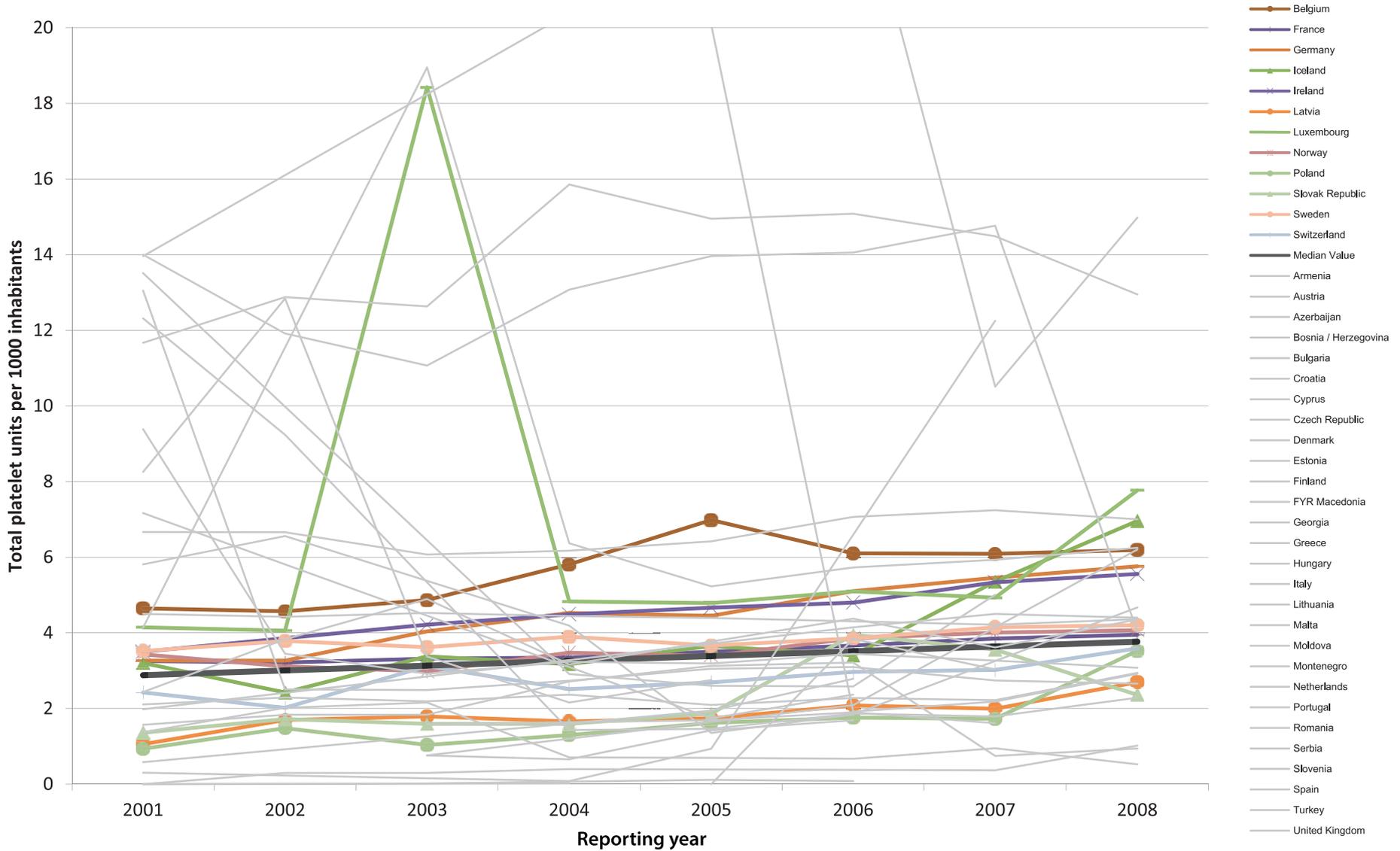
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		0.20								
Armenia	0		0.02		0.12	0.09				
Austria	2.44	3.83	4.89	3.16		4.38	3.61	4.35	-	-
Azerbaijan	0.00	0.01		0.02						
Belgium	4.65	4.57	4.87	5.81	6.98	6.10	6.09	6.19	5%	0.27
Bosnia / Herzegovina			0.76	0.66	1.43	1.69			-	-
Bulgaria	1.38	2.02	2.16	0.71	0.70	0.67	0.95	0.53	-10%	-0.13
Croatia	13.05	2.51	2.49	2.74	3.06	3.10	2.74	2.66	-	-
Cyprus	13.96					24.68	10.51	14.98	-	-
Czech Republic	2.11	2.29	2.19	2.37	2.10	2.28	2.23	2.95	-	-
Denmark	4.14		18.95	6.37	5.23	5.73	5.94	6.25	-	-
Estonia	1.98					4.15	4.50	4.40	-	-
Finland	6.67	6.66	6.07	6.17	6.42	7.07	7.25	7.00	-	-
FYR Macedonia			0.76			2.09		6.20		
France	3.26	3.22	3.32	3.35	3.50	3.67	3.85	3.95	1%	0.11
Georgia	0	0.30	0.30	0.40			0.37	1.02	-	-
Germany	3.27	3.27	4.04	4.53	4.45	5.10	5.46	5.76	1%	0.36
Greece	11.67	12.88	12.63	15.85	14.95	15.08	14.49	12.95	-	-
Hungary	12.31	9.24		1.43	1.46	1.87	1.79	2.28	-	-
Iceland	3.21	2.42	3.38	3.17	3.66	3.41	5.36	6.96	5%	0.45
Ireland	3.50		4.22	4.49	4.66	4.80	5.34	5.56	1%	0.28
Italy	8.26	12.84	3.37	2.16	2.75				-	-
Latvia	1.06	1.70	1.80	1.66	1.74	2.09	2.00	2.70	5%	0.16
Liechtenstein										
Lithuania	5.81	6.56		4.19	1.35	1.85		4.67	-	-
Luxembourg	4.15	4.06	18.42	4.83	4.79	5.10	4.93	7.77	5%	0.23
Malta				38.25		1.92	2.19	2.92	-	-
Moldova	0.30			0.09	0.94		12.25		-	-
Montenegro					0.00	3.84	3.03			
Netherlands	9.39	3.45	2.92	3.23	3.19	3.45	3.27	3.08	-	-
Norway	3.43	3.12	2.99	3.48	3.39	3.86	4.01	4.07	5%	0.16
Poland	0.94	1.49	1.04	1.30	1.62	1.76	1.73	3.53	1%	0.17
Portugal	7.17				1.74	2.37				
Romania	1.57	1.84	1.84	2.72	3.13	3.22	0.75	0.94	-	-
Russian Federation										
San Marino										
Serbia			1.58		1.69	1.90	1.61		-	-
Slovak Republic	1.36	1.72	1.60	1.60	1.87	3.95	3.56	2.37	10%	0.16
Slovenia	14.00	11.92	11.07	13.08	13.96	14.06	14.77	4.03	-	-
Spain	13.51			2.92	2.61	2.58	5.01		-	-
Sweden	3.52	3.79	3.63	3.90	3.67	3.86	4.15	4.21	5%	0.08
Switzerland	2.43	2.02	3.12	2.51	2.69	2.97	3.02	3.59	5%	0.17
Turkey	0.58				1.95	2.79				
Ukraine			0.12							
United Kingdom	4.50	4.42	4.53	4.44	4.39		4.22	4.36	-10%	-0.03
Median value	2.88	3.01	3.14	3.26	3.39	3.52	3.64	3.77	0.01%	0.13

No data obtained



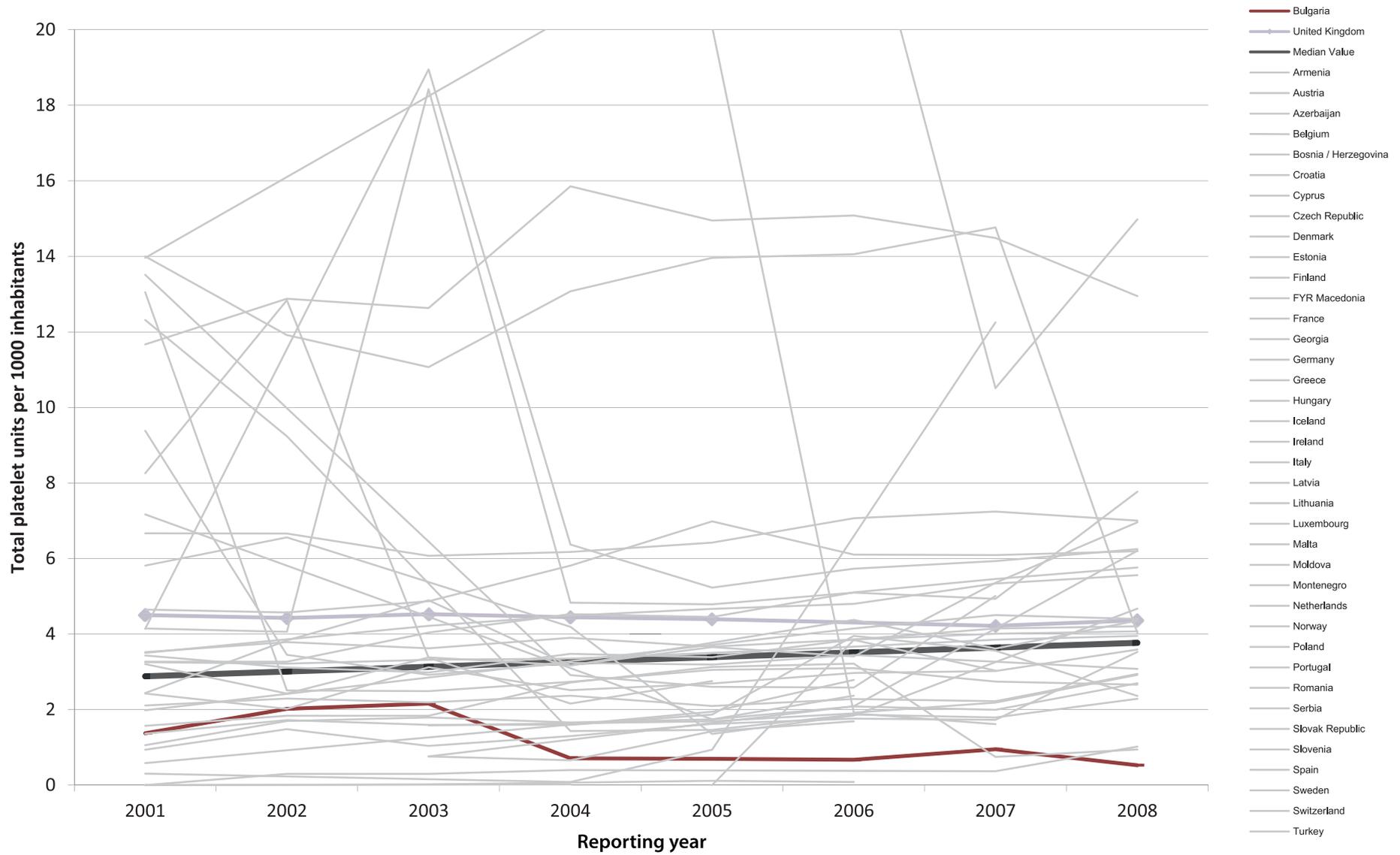
3.9.1:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 positive trends (Belgium, France, Germany, Iceland, Ireland, Latvia, Luxembourg, Norway, Poland, Slovak Republic, Sweden, Switzerland), and 2 negative trends (Bulgaria, United Kingdom). There is an overall negative trend.



3.9.2:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 positive trends (Belgium, France, Germany, Iceland, Ireland, Latvia, Luxembourg, Norway, Poland, Slovak Republic, Sweden, Switzerland). There is an overall negative trend.



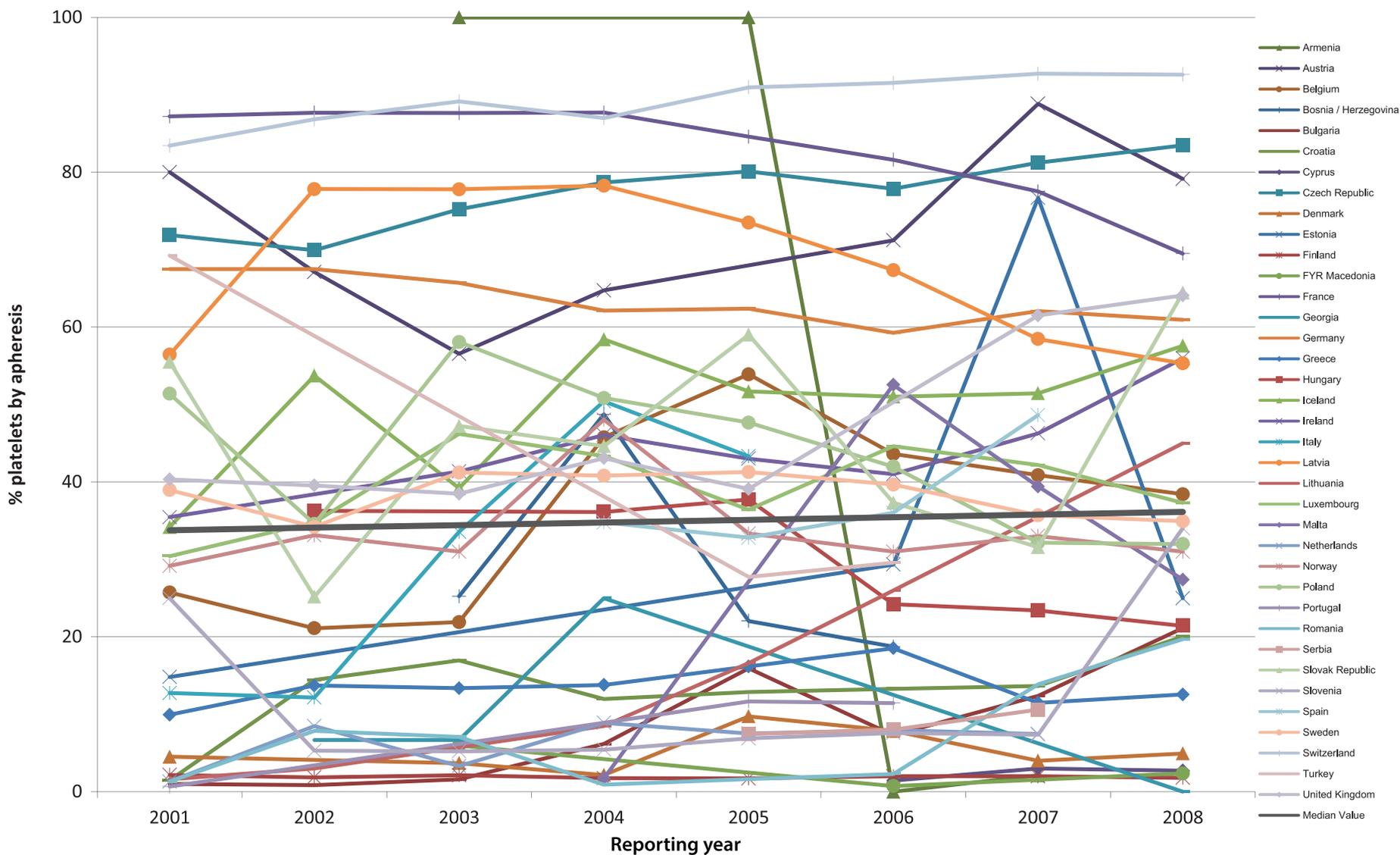
3.9.3:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 2 negative trends (Bulgaria, United Kingdom). There is an overall negative trend.

3.10. Percentage platelets by apheresis

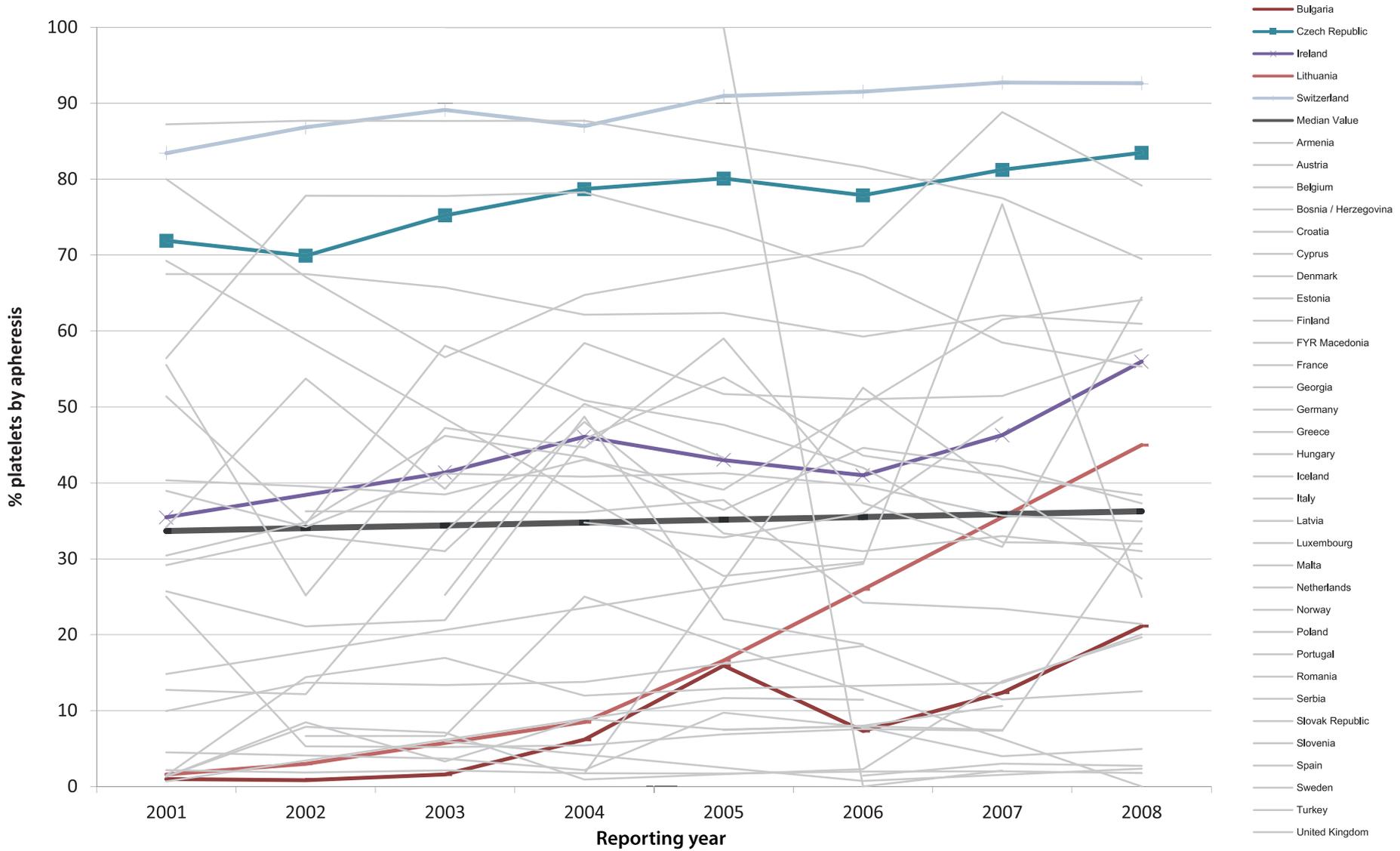
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra										
Armenia			100		100	0	2		-	-
Austria	80	67	57	65		71	89	79	-	-
Azerbaijan	100			75						
Belgium	26	21	22	46	54	44	41	38	-	-
Bosnia / Herzegovina			25	49	22	19			-	-
Bulgaria	1	1	2	6	16	7	12	21	1%	2
Croatia	1	14	17	12	13	13	14	20	-	-
Cyprus						1	3	3		
Czech Republic	72	70	75	79	80	78	81	83	1%	2
Denmark	5		4	2	10	8	4	5	-	-
Estonia	15					29	77	25	-	-
Finland	2	2	2	2	2	2	2	2	-	-
FYR Macedonia			6			1		2		
France	87	88	88	88	85	82	78	69	-5%	-2
Georgia		7	7	25				0	-	-
Germany	67	67	66	62	62	59	62	61	-1%	-1
Greece	10	14	13	14	16	19	11	13	-	-
Hungary		36		36	38	24	23	21	-10%	-3
Iceland	34	54	39	58	52	51	51	58	-	-
Ireland	35		41	46	43	41	46	56	10%	2
Italy	13	12	34	50	43				-	-
Latvia	56	78	78	78	73	67	58	55	-	-
Liechtenstein										
Lithuania	2	3		8	17	26		45	1%	6
Luxembourg	30	35	46	43	36	45	42	37	-	-
Malta				2		53	39	27	-	-
Moldova										
Montenegro										
Netherlands	1	8	3	9	7	8	7		-	-
Norway	29	33	31	48	33	31	33	31	-	-
Poland	51	35	58	51	48	42	32	32	-5%	-4
Portugal	1				12	11				
Romania	1	8	7	1	2	2	14	20	-	-
Russian Federation										
San Marino										
Serbia					7	8	11			
Slovak Republic	56	25	47	45	59	37	32	64	-	-
Slovenia	25	5	5	5	7	8	7	34	-	-
Spain				35	33	36	49		-	-
Sweden	39	34	41	41	41	40	36	35	-	-
Switzerland	83	87	89	87	91	92	93	93	1%	1
Turkey	69				28	30				
Ukraine										
United Kingdom	40	40	38	43	39		62	64	-	-
Median value	33.6	34.0	34.4	34.8	35.1	35.5	35.9	36.3	4%	0.4

No data obtained



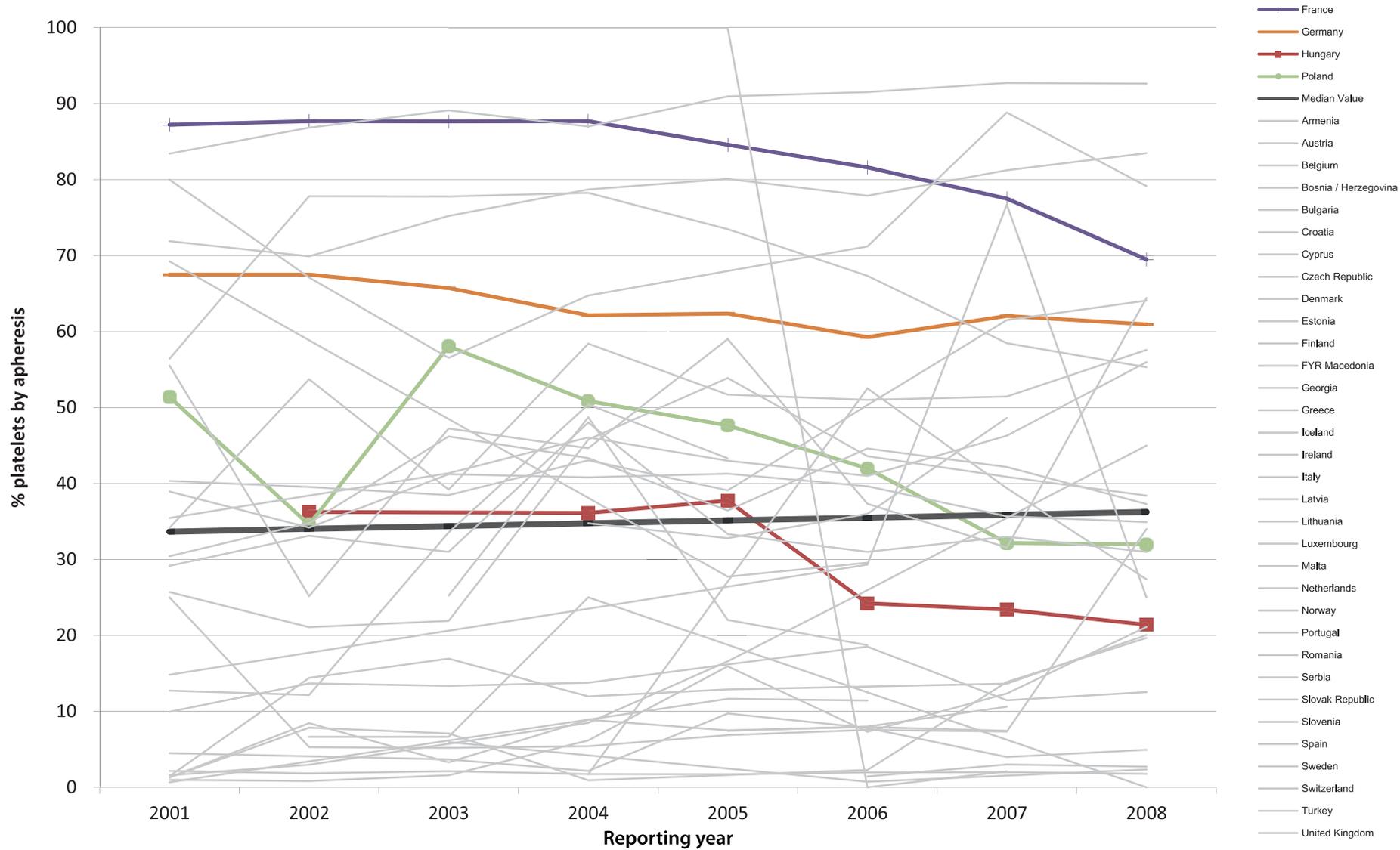
3.10.1:

There are 32 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 5 positive trends (Bulgaria, Czech Republic, Ireland, Lithuania, Switzerland), and 4 negative trends (France, Germany, Hungary, Poland). There is an overall negative trend.



3.10.2:

There are 32 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 5 positive trends (Bulgaria, Czech Republic, Ireland, Lithuania, Switzerland). There is an overall negative trend.



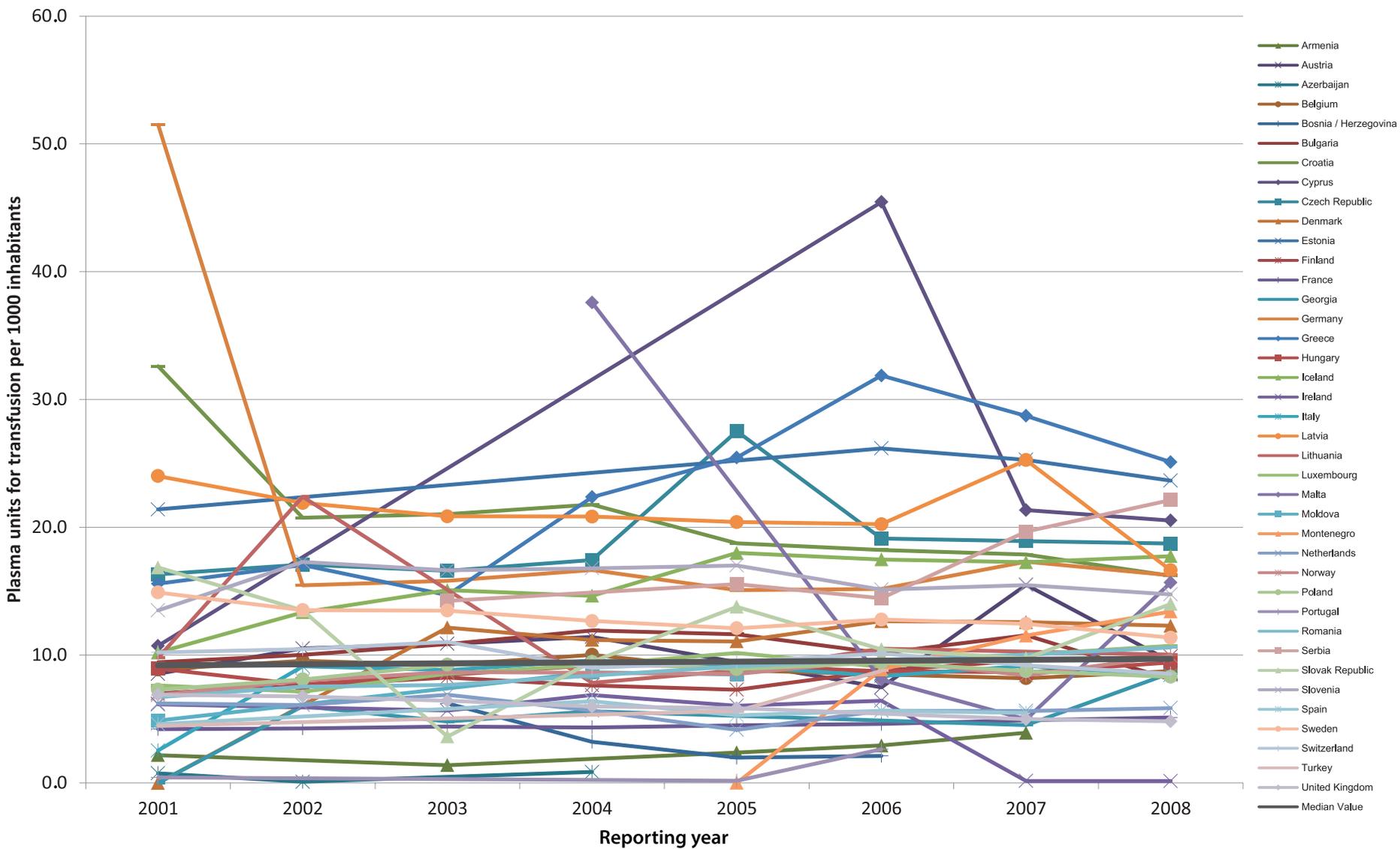
3.10.3:

There are 32 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (France, Germany, Hungary, Poland). There is an overall negative trend.

3.11. FFP use per 1000 inhabitants

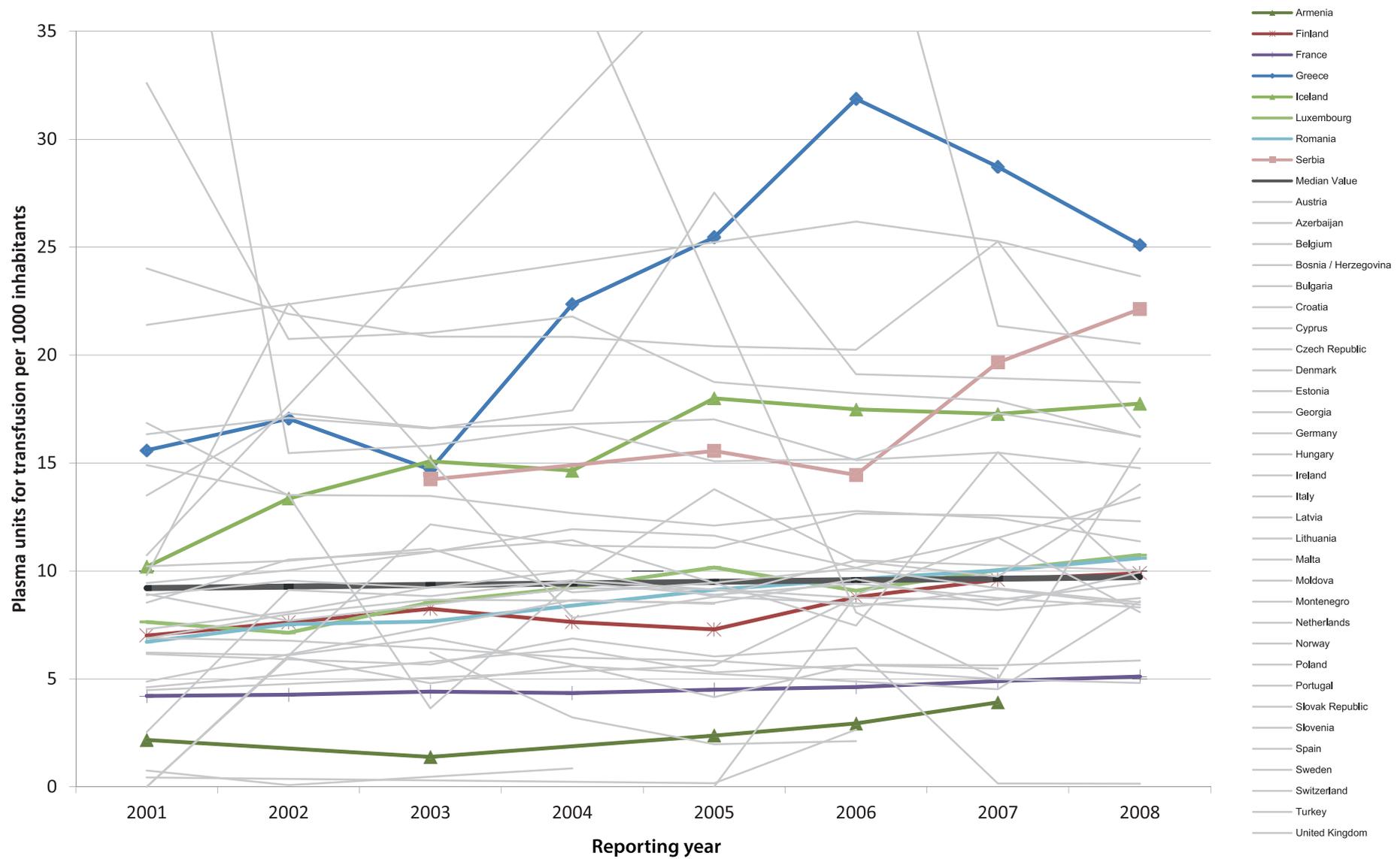
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		0.8								
Armenia	2.2		1.4		2.4	2.9	3.9		10%	0.5
Austria	8.5	10.5	10.9	11.4		7.5	15.5	9.5	-	-
Azerbaijan	0.8	0.1		0.9						
Belgium	8.9	9.6	9.2	10.0	8.8	8.5	8.2	8.7	-	-
Bosnia / Herzegovina			6.2	3.2	2.0	2.1			-	-
Bulgaria	9.4	10.0	10.9	11.9	11.6	10.1	11.5	8.1	-	-
Croatia	32.6	20.7	21.0	21.8	18.8	18.2	17.9	16.2	-1%	-1.0
Cyprus	10.7					45.5	21.3	20.5	-	-
Czech Republic	16.3	17.1	16.6	17.4	27.5	19.1	18.9	18.7	-	-
Denmark	0		12.2	11.2	11.1	12.7	12.6	12.3	-	-
Estonia	21.4					26.2	25.3	23.7	-	-
Finland	7.0	7.6	8.2	7.6	7.3	8.8	9.6	9.9	5%	0.4
FYR Macedonia						11.5		8.9		
France	4.2	4.3	4.4	4.3	4.5	4.6	4.9	5.1	1%	0.1
Georgia	0	6.0	4.8	5.6			4.5	8.6	-	-
Germany	51.5	15.5	15.8	16.7	15.1	15.2	17.3	16.3	-	-
Greece	15.6	17.1	14.7	22.4	25.5	31.9	28.7	25.1	10%	2.2
Hungary	8.9	7.7		9.2	9.2	8.8	8.7	9.4	-	-
Iceland	10.2	13.4	15.1	14.6	18.0	17.5	17.3	17.7	5%	0.8
Ireland	6.2		5.7	6.9	6.0	6.4	0.2	0.1	-	-
Italy	2.5	9.1	8.8	9.6	9.1	8.4	9.2	8.4	-	-
Latvia	24.0	21.9	20.9	20.8	20.4	20.2	25.3	16.6	-10%	-0.5
Liechtenstein										
Lithuania	9.8	22.4		7.8	8.8	10.5		10.0	-	-
Luxembourg	7.6	7.1	8.5	9.2	10.2	9.1	10.0	10.7	5%	0.5
Malta				37.6		8.1	5.0	15.7	-	-
Moldova	4.9			8.7	8.5					
Montenegro					0.01	8.9	11.5	13.4		
Netherlands	6.2	6.1	6.9	5.7	4.2	5.6	5.6	5.9	-	-
Norway	6.9	8.0	8.7	8.6	8.5	9.6	8.4	9.9	-	-
Poland	7.3	8.1	9.2	9.5	8.9	9.4	8.7	8.3	-	-
Portugal	0.4				0.2	2.6				
Romania	6.7	7.5	7.7		9.1	9.6	10.0	10.6	1%	0.5
Russian Federation										
San Marino										
Serbia			14.2		15.6	14.4	19.7	22.1	10%	1.8
Slovak Republic	16.9	13.5	3.6	9.5	13.8	10.5	9.7	14.0	-	-
Slovenia	13.5	17.3	16.6	16.8	17.0	15.1	15.5	14.8	-	-
Spain	4.6			6.4	5.3	5.6	5.5		-	-
Sweden	14.9	13.5	13.5	12.7	12.1	12.8	12.4	11.4	-1%	-0.4
Switzerland	10.2	10.5	11.0	9.0	9.5	10.1	9.2	8.5	-	-
Turkey	4.5				5.6	8.8				
Ukraine			0.5							
United Kingdom	6.9	6.8	6.4	6.0	5.8		5.0	4.8	-1%	-0.3
Median value	9.2	9.3	9.4	9.4	9.5	9.6	9.6	9.7	27%	

No data obtained



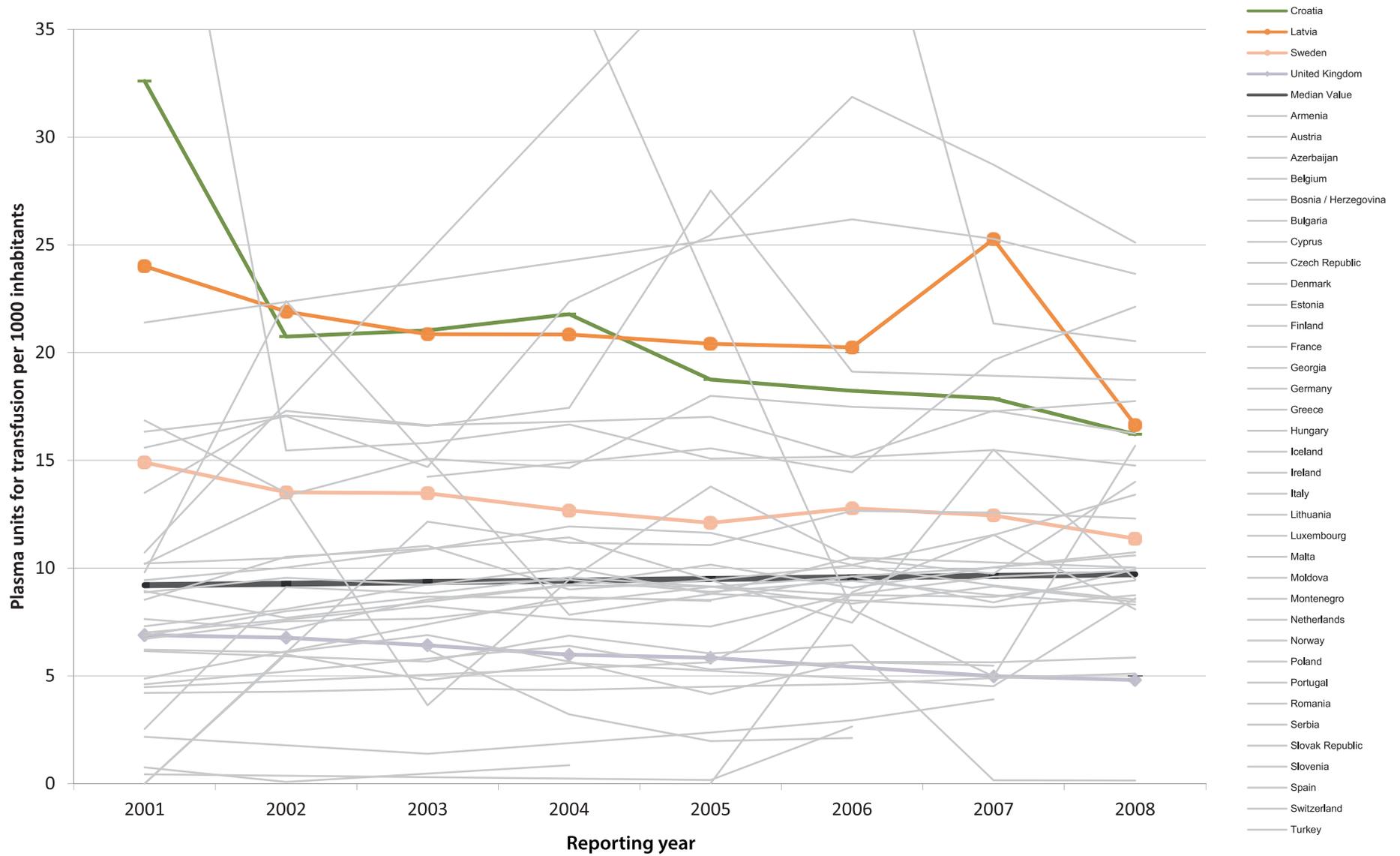
3.11.1:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 positive trends (Armenia, Finland, France, Greece, Iceland, Luxembourg, Romania, Serbia), and 4 negative trends (Croatia, Latvia, Sweden, United Kingdom). There is no overall trend.



3.11.2:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 positive trends (Armenia, Finland, France, Greece, Iceland, Luxembourg, Romania, Serbia). There is no overall trend.



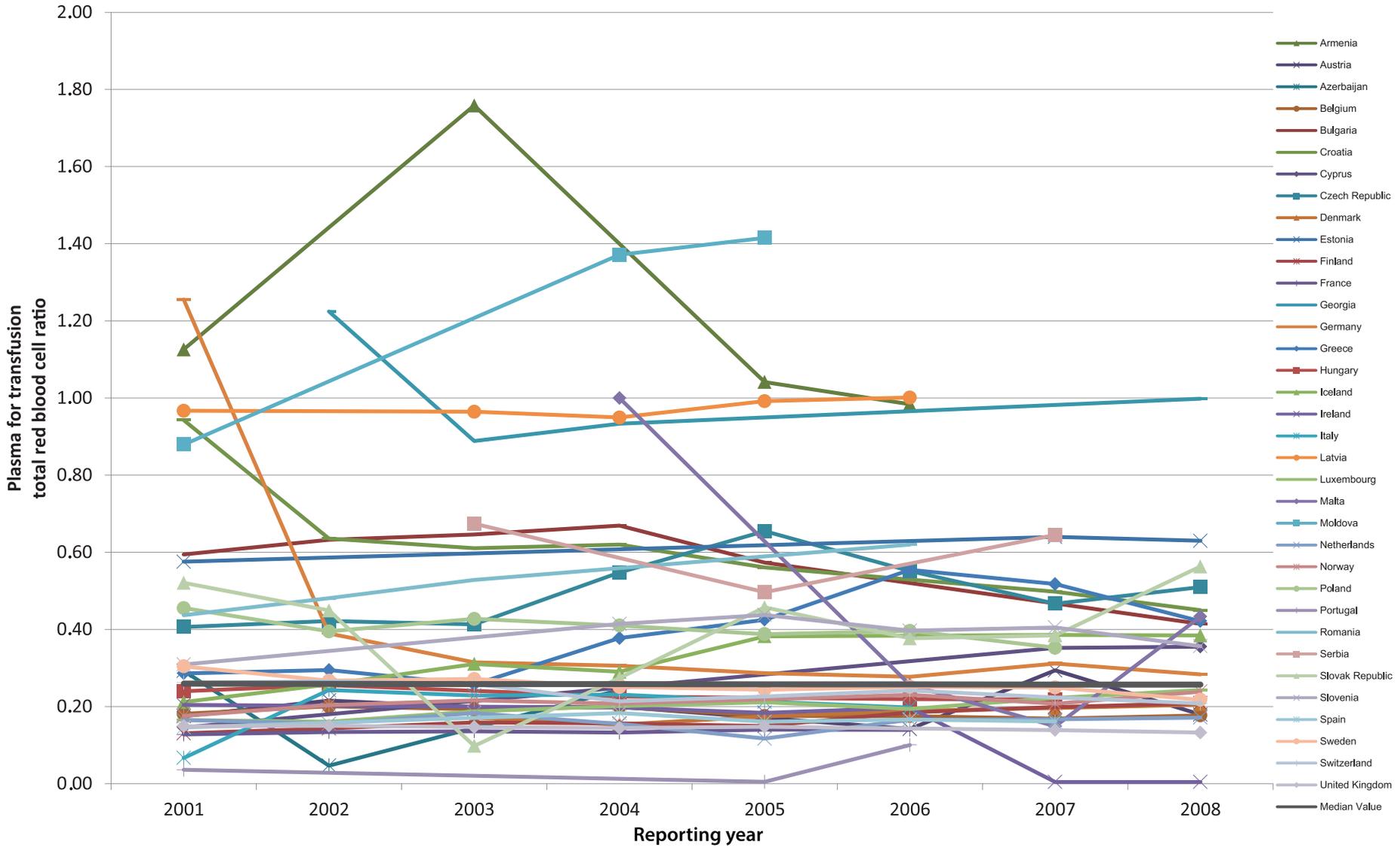
3.11.3:

There are 34 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Croatia, Latvia, Sweden, United Kingdom). There is no overall trend.

3.12. FFP RBC ratio

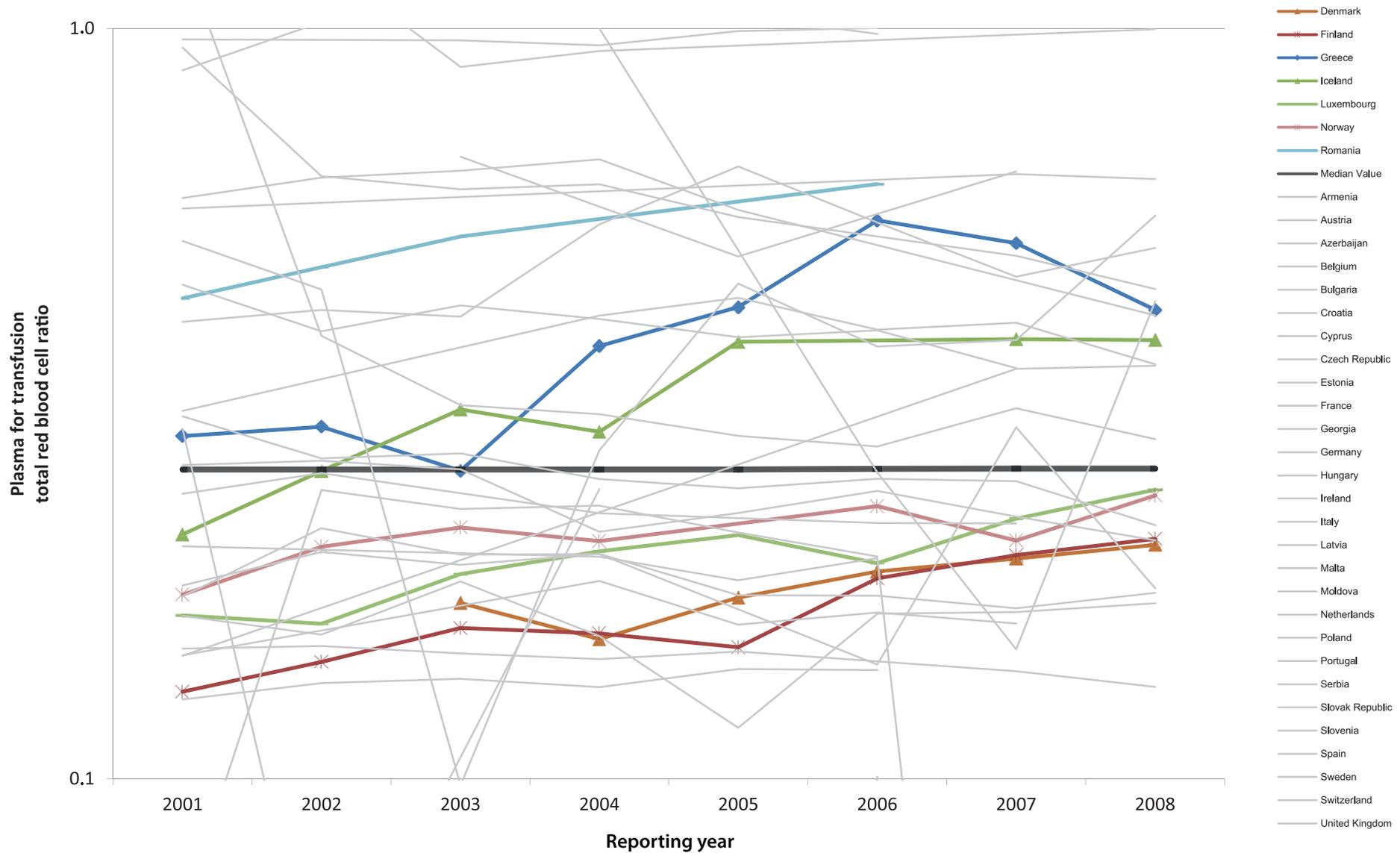
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	0.79									
Andorra		0.07								
Armenia	1.13		1.76		1.04	0.98			-	-
Austria	0.18	0.22	0.20	0.20		0.14	0.29	0.18	-	-
Azerbaijan	0.29	0.05		0.24						
Belgium	0.18	0.20	0.19	0.20	0.18	0.18	0.17	0.18	-	-
Bosnia / Herzegovina			0.68	0.34						
Bulgaria	0.59	0.63	0.65	0.67	0.57			0.41	-	-
Croatia	0.94	0.64	0.61	0.62	0.56		0.50	0.45	-1%	-0.04
Cyprus	0.15						0.35	0.36		
Czech Republic	0.41	0.42	0.41	0.55	0.66	0.55	0.47	0.51	-	-
Denmark			0.17	0.15	0.17	0.19	0.20	0.21	5%	0.01
Estonia	0.58						0.64	0.63		
Finland	0.13	0.14	0.16	0.16	0.15	0.19	0.20	0.21	1%	0.01
FYR Macedonia						1.21		0.46		
France	0.13	0.13	0.14	0.13	0.14	0.14			-	-
Georgia		1.22	0.89	0.93				1.00	-	-
Germany	1.26	0.39	0.31	0.31	0.29	0.28	0.31	0.28	-5%	-0.02
Greece	0.29	0.29	0.26	0.38	0.43	0.55	0.52	0.42	10%	0.04
Hungary	0.24	0.26		0.23		0.22	0.22		-10%	0.00
Iceland	0.21	0.26	0.31	0.29	0.38		0.39	0.38	5%	0.03
Ireland	0.20			0.20	0.18	0.20	0.00	0.00	-	-
Italy	0.07	0.24	0.23	0.23	0.21	0.20			-	-
Latvia	0.97		0.96	0.95	0.99	1.00			-	-
Liechtenstein										
Lithuania	0.53	0.51								
Luxembourg	0.17	0.16	0.19	0.20	0.21	0.19	0.22	0.24	1%	0.01
Malta				1.00		0.26	0.15	0.43	-	-
Moldova	0.88			1.37	1.42					
Montenegro							0.63			
Netherlands	0.16	0.16	0.18	0.15	0.12	0.17	0.17	0.17	-	-
Norway	0.18	0.20	0.22	0.21		0.23	0.21	0.24	5%	0.01
Poland	0.46	0.39	0.43	0.41	0.39	0.40	0.35		-10%	-0.02
Portugal	0.04				0.005	0.10				
Romania	0.44	0.48	0.53			0.62			10%	0.04
Russian Federation										
San Marino										
Serbia			0.67		0.50		0.64			
Slovak Republic	0.52	0.45	0.10	0.27	0.46	0.38	0.38	0.56	-	-
Slovenia	0.31			0.41	0.44	0.40	0.41	0.36	-	-
Spain	0.15			0.18	0.16	0.17	0.16		-	-
Sweden	0.30	0.27	0.27	0.25	0.24	0.25	0.25	0.22	-5%	-0.01
Switzerland	0.26	0.27	0.26	0.21	0.23	0.24	0.22	0.21	-5%	-0.01
Turkey	0.36									
Ukraine			1.01							
United Kingdom	0.15	0.15	0.15	0.14	0.15		0.14	0.13	-5%	0.00
Median value	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	98%	

No data obtained



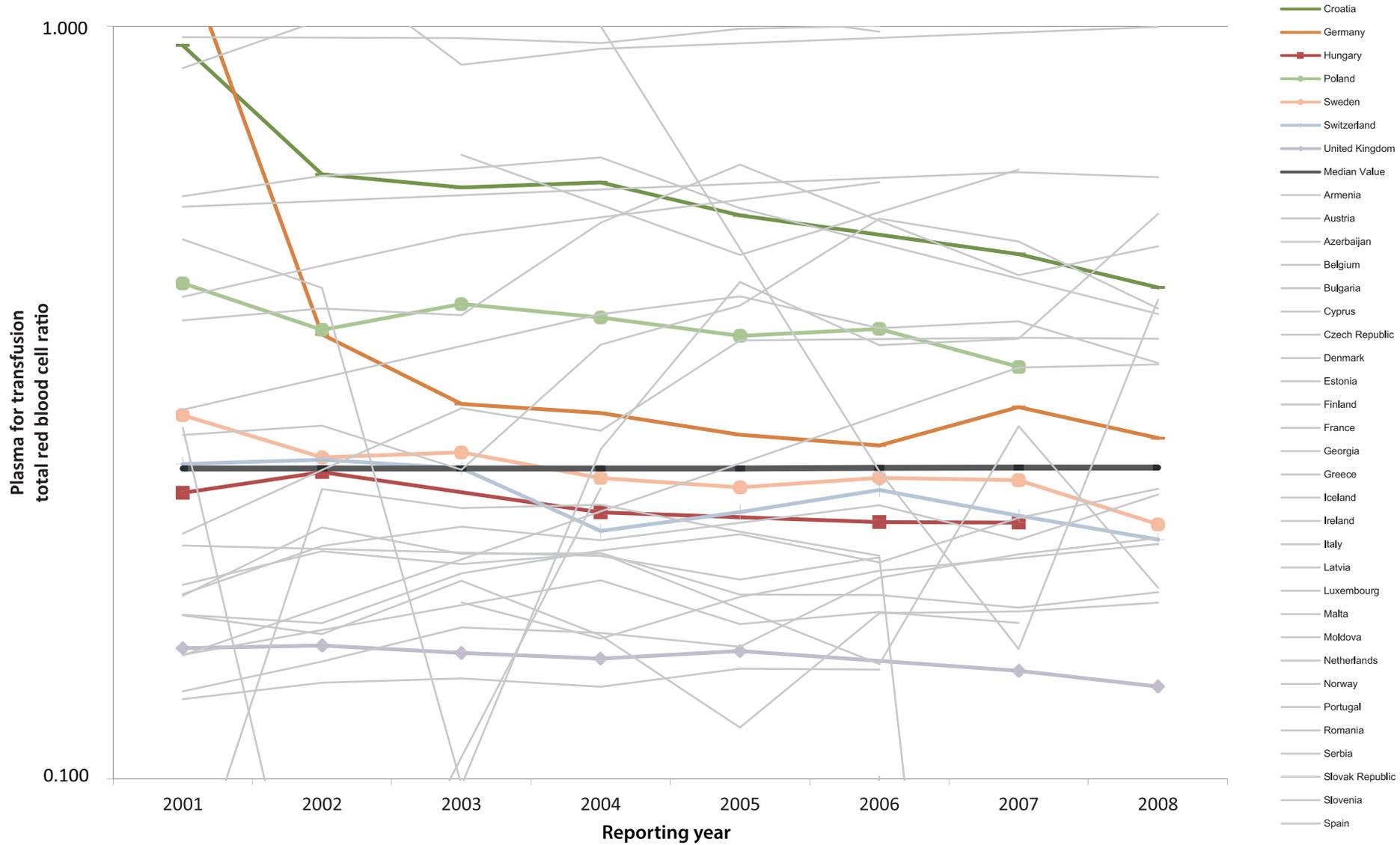
3.12.1:

There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 negative trends (Croatia, Germany, Hungary, Ireland, Poland, Sweden, Switzerland, United Kingdom), and 7 positive trends (Denmark, Finland, Greece, Iceland, Luxembourg, Norway, Romania). There is no overall trend.



3.12.2:

There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 7 positive trends (Denmark, Finland, Greece, Iceland, Luxembourg, Norway, Romania). There is no overall trend.



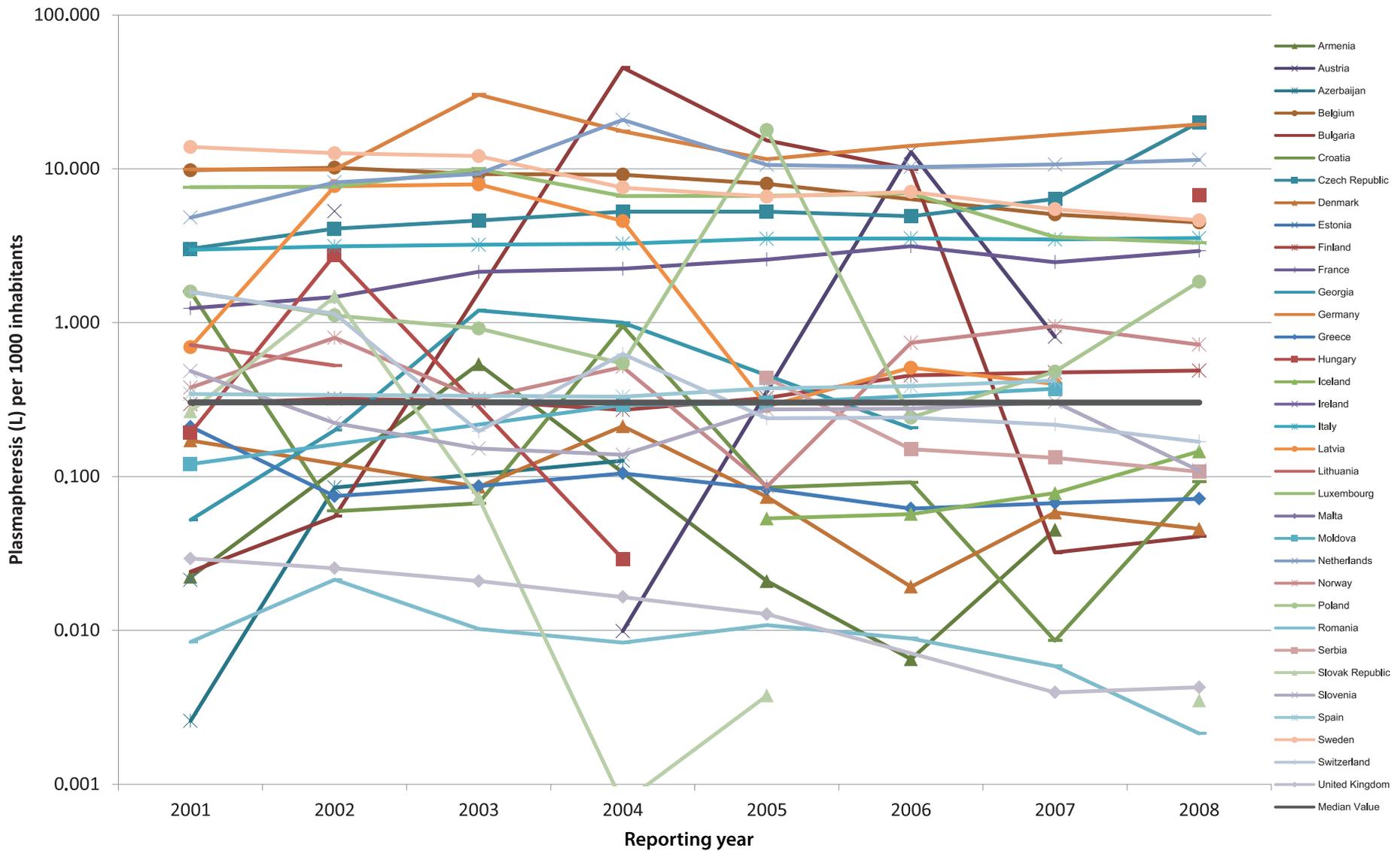
3.12.3:

There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 negative trends (Croatia, Germany, Hungary, Ireland, Poland, Sweden, Switzerland, United Kingdom). There is no overall trend.

3.13. Plasmapheresis (L) per 1000 inhabitants

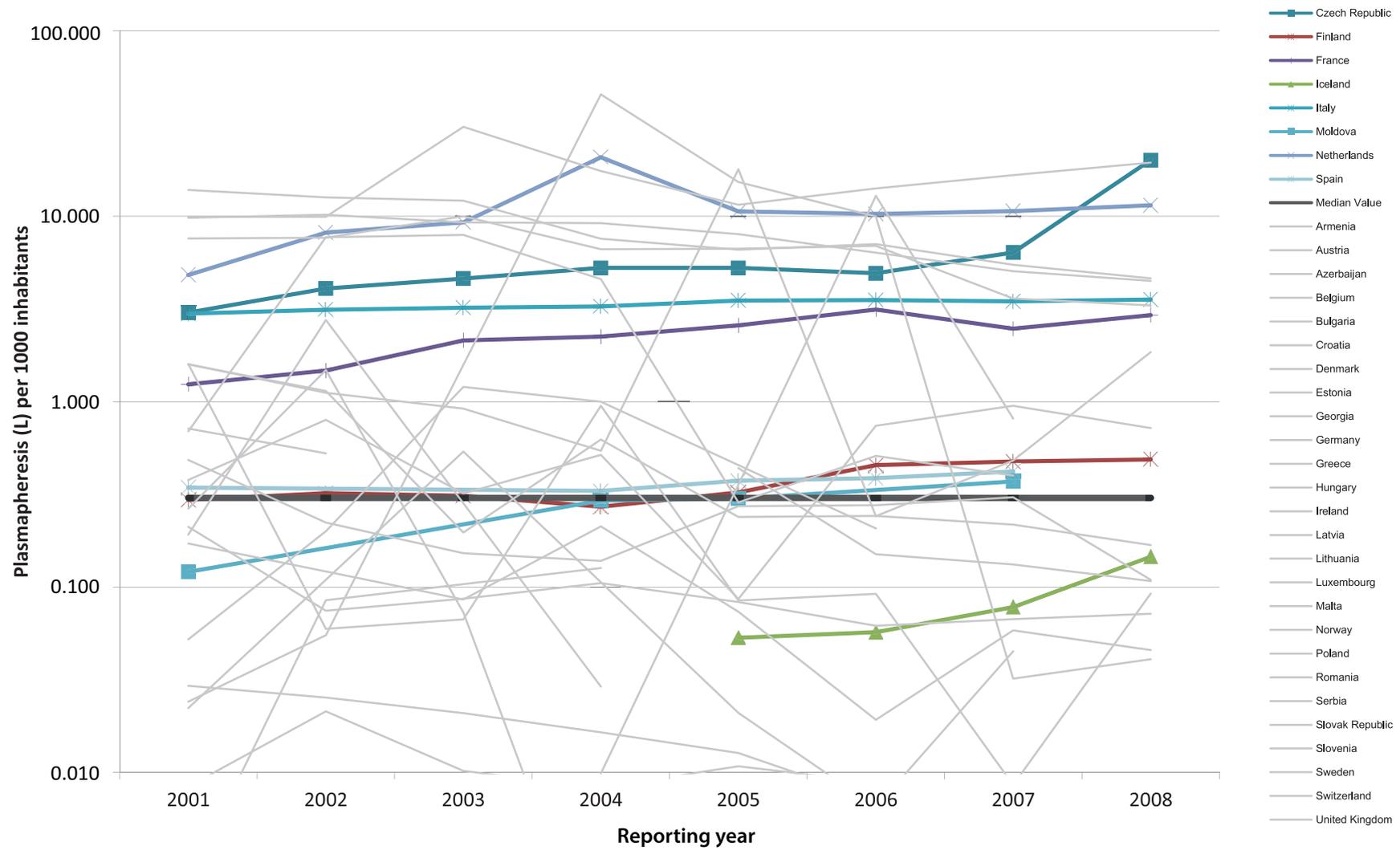
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra		0								
Armenia	0.02		0.54		0.02	0.01	0.05		-	-
Austria		5.29	0	0.01		12.86	0.81	0	-	-
Azerbaijan	0.00	0.09		0.13						
Belgium	9.79	10.17	9.25	9.17	7.99		5.06	4.48	-1%	-0.79
Bosnia / Herzegovina				0						
Bulgaria	0.02	0.06		45.43	15.27	9.97	0.03	0.04	-	-
Croatia	1.59	0.06	0.07	0.95	0.08	0.09	0.01	0.09	-	-
Cyprus							0	0		
Czech Republic	3.02	4.08	4.61	5.26	5.26	4.92	6.37	20.08	1%	0.56
Denmark	0.17		0.09	0.21	0.07	0.02	0.06	0.05	-10%	-0.02
Estonia	0.02					0	0	0	-	-
Finland	0.30	0.32	0.31	0.27	0.32	0.45	0.48	0.49	5%	0.03
FYR Macedonia			0					0		
France	1.24	1.47	2.14	2.24	2.58	3.14	2.47	2.93	1%	0.24
Georgia	0.05	0.20	1.20	1.00		0.21		0	-	-
Germany	9.92	9.92	30.29	17.55	11.54	14.12	16.63	19.43	-	-
Greece	0.21	0.07	0.09	0.10	0.08	0.06	0.07	0.07	-	-
Hungary	0.19	2.76		0.03		0	0	6.77	-	-
Iceland	0	0	0	0	0.05	0.06	0.08	0.15	1%	0.02
Ireland	0		0		0	0	0	0	-	-
Italy	2.98	3.13	3.21	3.26	3.51	3.53	3.47	3.55	1%	0.08
Latvia	0.69	7.71	7.93	4.58	0.29	0.51	0.40		-	-
Liechtenstein										
Lithuania	0.72	0.53		0						
Luxembourg	7.59	7.65	9.99	6.64	6.69	6.92	3.60	3.31	-10%	-0.64
Malta						0	0	0		
Moldova	0.12			0.29	0.30		0.37		10%	0.04
Montenegro								0		
Netherlands	4.83	8.17	9.27	20.81	10.61	10.28	10.67	11.45	5%	0.57
Norway	0.38	0.80	0.32	0.52	0.09	0.74	0.95	0.72	-	-
Poland	1.59	1.12	0.92	0.54	17.90	0.24	0.48	1.85	-	-
Portugal					0	0.00				
Romania	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	-	-
Russian Federation				2.11						
San Marino										
Serbia					0.44	0.15	0.13	0.11	-10%	-0.07
Slovak Republic	0.27	1.48	0.07	0.00	0.00	0	0	0.00	-5%	-0.03
Slovenia	0.49	0.22	0.15	0.14	0.27	0.28	0.31	0.11	-	-
Spain	0.34			0.33	0.37	0.39	0.42		10%	0.02
Sweden	13.86	12.64	12.11	7.56	6.60	7.07	5.47	4.63	-1%	-1.35
Switzerland	1.59	1.14	0.20	0.63	0.24	0.24	0.22	0.17	-5%	-0.17
Turkey										
Ukraine										
United Kingdom	0.03	0.03	0.02	0.02	0.01		0.00	0.00	-1%	0.00
Median value	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	39%	

No data obtained



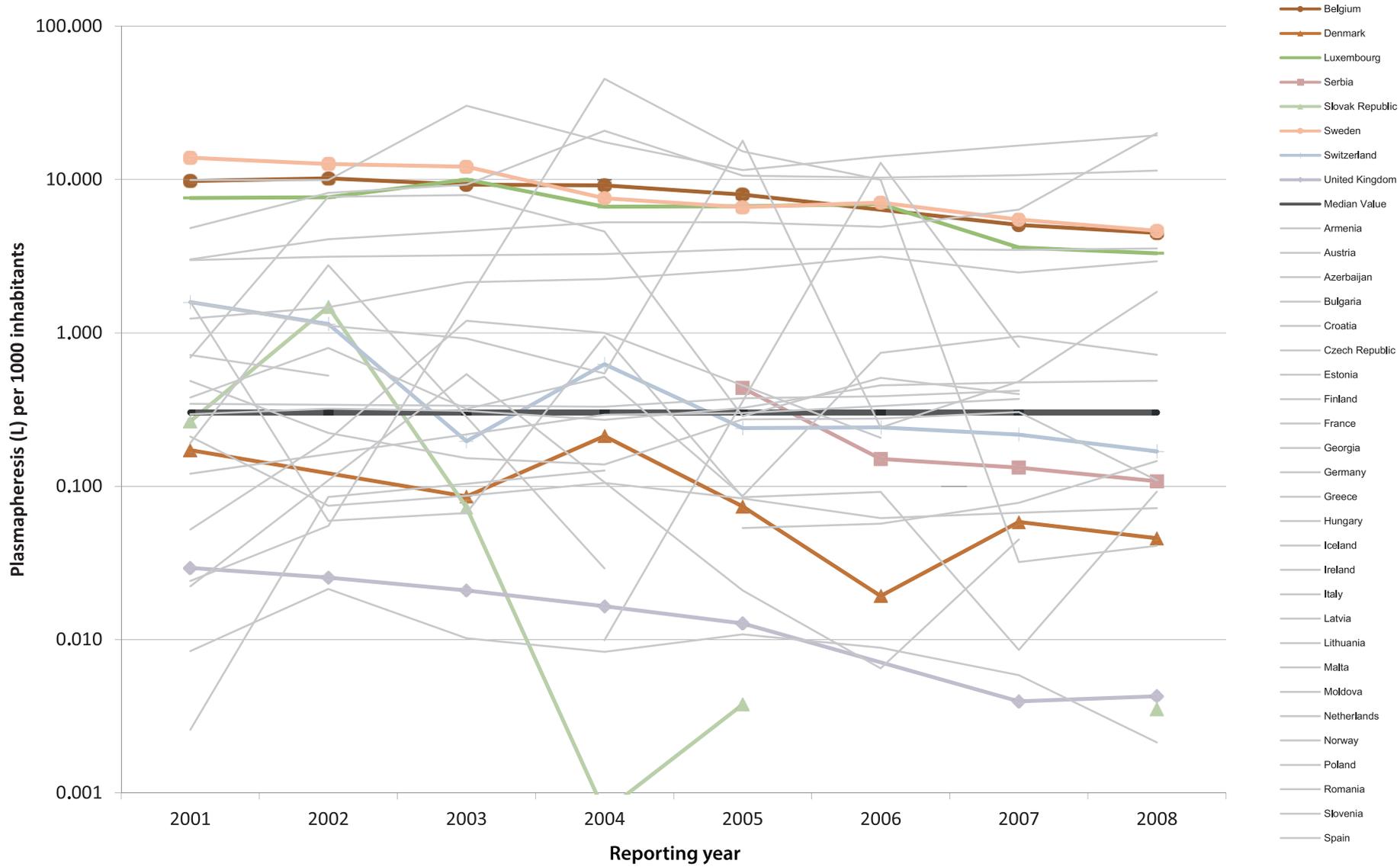
3.13.1:

There are 31 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 negative trends (Belgium, Denmark, Luxembourg, Serbia, Slovak Republic, Sweden, Switzerland, United Kingdom), and 8 positive trends (Czech Republic, Finland, France, Iceland, Italy, Moldova, Netherlands, Spain). There is no overall trend.



3.13.2:

There are 31 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 positive trends (Czech Republic, Finland, France, Iceland, Italy, Moldova, Netherlands, Spain). There is no overall trend.

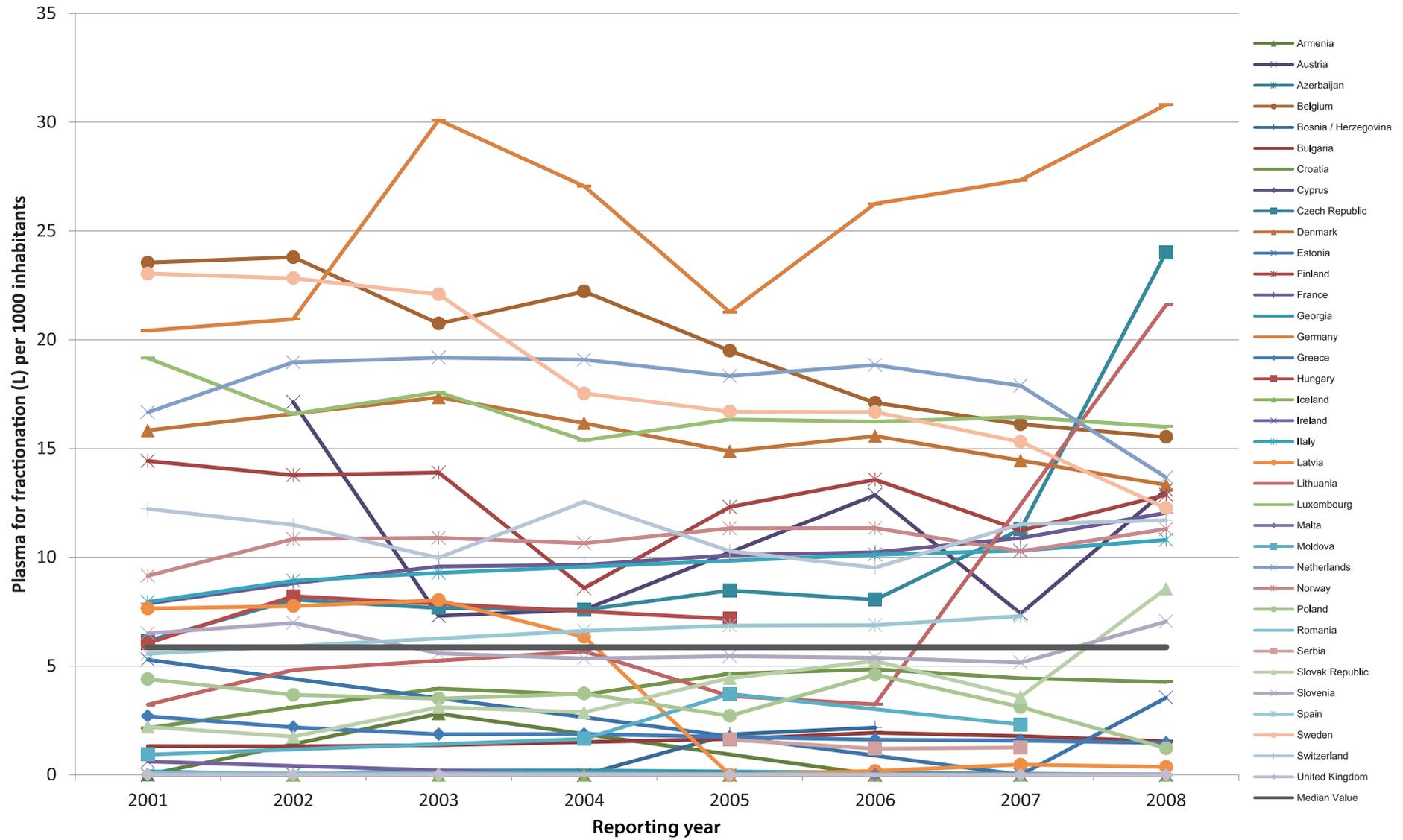


3.13.3: There are 31 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 negative trends (Belgium, Denmark, Luxembourg, Serbia, Slovak Republic, Sweden, Switzerland, United Kingdom). There is no overall trend.

3.14. Litres plasma for fractionation per 1000 inhabitants

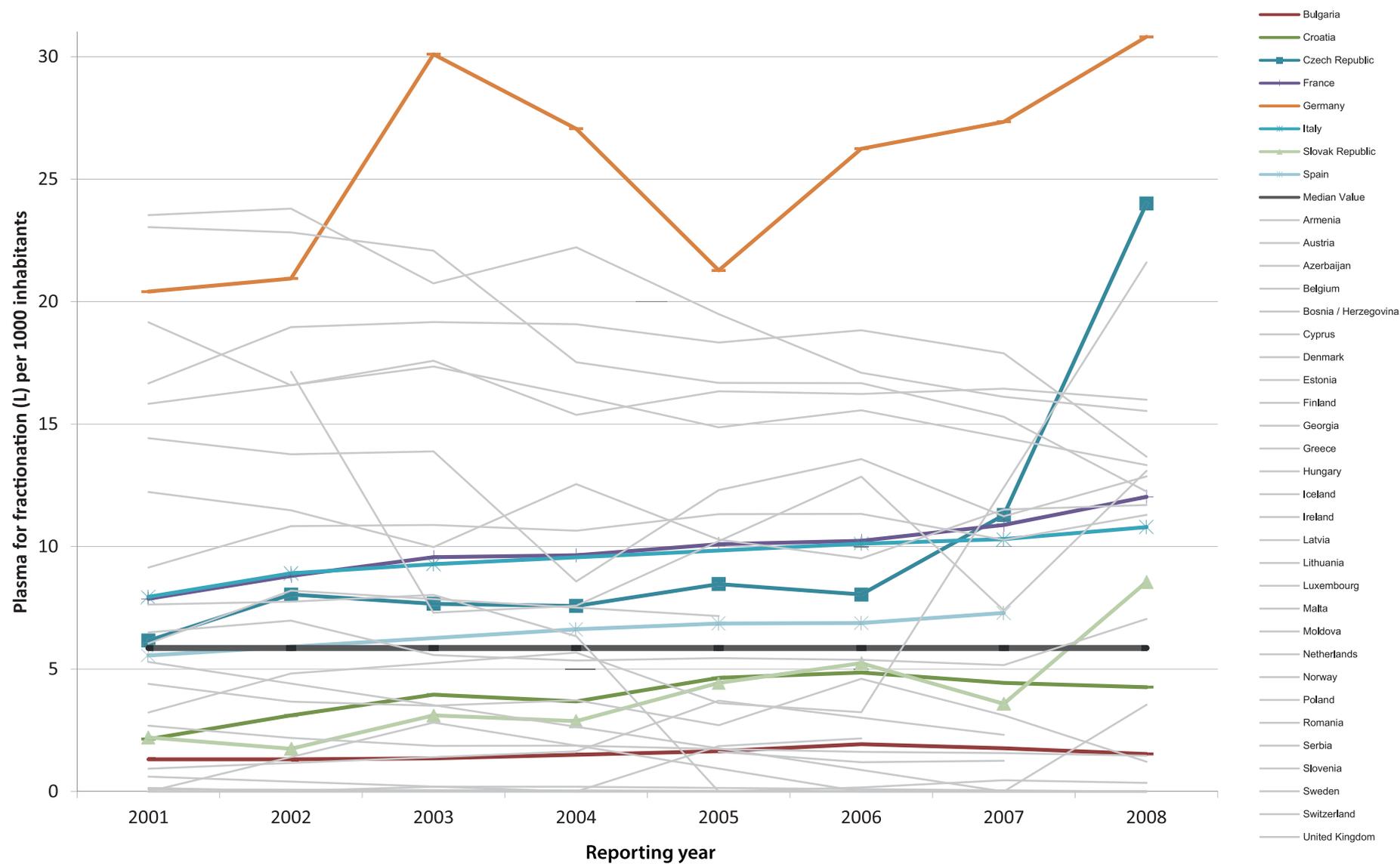
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra										
Armenia	0.00		2.82			0.00				
Austria		17.13	7.31	7.59		12.86	7.40	13.09	-	-
Azerbaijan	0	0		0						
Belgium	23.54	23.80	20.74	22.22	19.49	17.10	16.11	15.53	-1%	-1.26
Bosnia / Herzegovina				0	1.86	2.17				
Bulgaria	1.32	1.31	1.36	1.50	1.65	1.93	1.77	1.54	5%	0.08
Croatia	2.14	3.11	3.96	3.69	4.64	4.86	4.44	4.26	10%	0.29
Cyprus	0					0	0	0	-	-
Czech Republic	6.17	8.05	7.67	7.58	8.48	8.05	11.29	24.01	5%	0.80
Denmark	15.83		17.35	16.16	14.87	15.57	14.45	13.32	-5%	-0.57
Estonia	5.29						0	3.55		
Finland	14.42	13.77	13.89	8.58	12.31	13.57	11.24	12.87	-	-
FYR Macedonia			2.17					0		
France	7.87	8.80	9.57	9.65	10.10	10.23	10.89	12.04	1%	0.48
Georgia	0.15	0.02	0.20	0.20				0	-	-
Germany	20.41	20.94	30.10	27.06	21.27	26.25	27.34	30.81	10%	1.16
Greece	2.69	2.19	1.86	1.88	1.74	1.62	1.57	1.47	-1%	-0.12
Hungary	6.05	8.21			7.16					
Iceland		0	0	0	0	0	0	0	-	-
Ireland	0.61			0	0	0	0	0	-	-
Italy	7.95	8.92	9.28			10.12	10.31	10.80	1%	0.34
Latvia	7.64	7.76	8.03	6.34	0	0.17	0.47	0.36	-	-
Liechtenstein										
Lithuania	3.23	4.82		5.67	3.62	3.24		21.60	-	-
Luxembourg	19.15	16.59	17.59	15.38	16.34	16.24	16.44	16.00	-	-
Malta						0	0	0		
Moldova	0.93			1.65	3.71		2.31		-	-
Montenegro										
Netherlands	16.67	18.96	19.17	19.08	18.33	18.84	17.89	13.67	-	-
Norway	9.15	10.84	10.89	10.65	11.33	11.34	10.27	11.30	-	-
Poland	4.40	3.67	3.50	3.73	2.72	4.60	3.12	1.22	-	-
Portugal	0					0				
Romania	0.09						0	0		
Russian Federation				1.31						
San Marino										
Serbia					1.62	1.20	1.26			
Slovak Republic	2.21	1.75	3.11	2.87	4.44	5.24	3.59	8.56	5%	0.69
Slovenia	6.50	6.98	5.58	5.35	5.45	5.38	5.16	7.05	-	-
Spain	5.56			6.62	6.86	6.88	7.29		5%	0.25
Sweden	23.04	22.83	22.08	17.53	16.69	16.67	15.30	12.25	-1%	-1.52
Switzerland	12.23	11.48	9.98	12.55	10.29	9.52	11.51	11.70	-	-
Turkey					0	0				
Ukraine			1.79							
United Kingdom	0	0	0		0		0	0	-	-
Median value	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	87%	

No data obtained



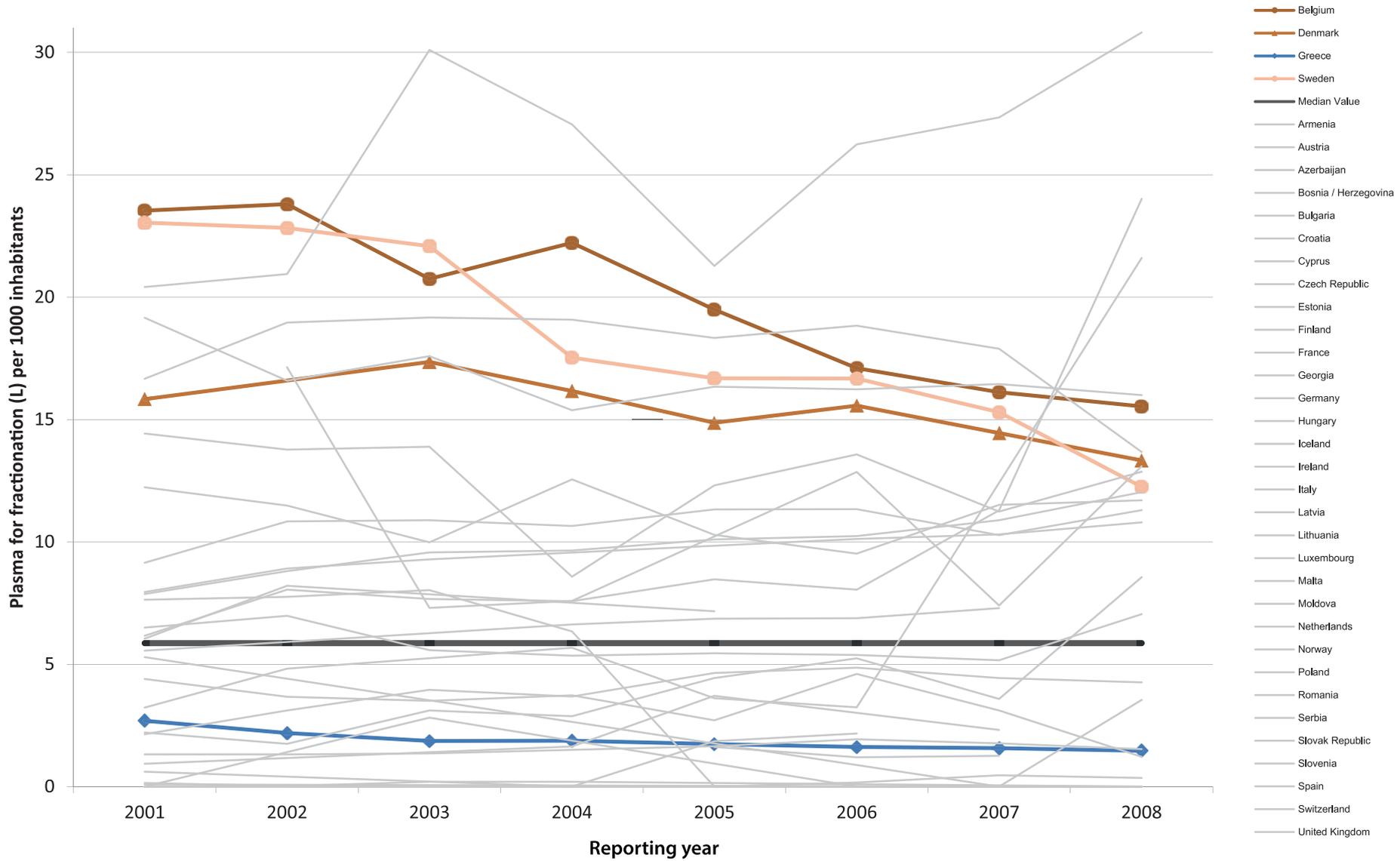
3.14.1:

There are 28 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 positive trends (Bulgaria, Croatia, Czech Republic, France, Germany, Italy, Slovak Republic, Spain), and 4 negative trends (Belgium, Denmark, Greece, Sweden). There is no overall trend.



3.14.2:

There are 28 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 8 positive trends (Bulgaria, Croatia, Czech Republic, France, Germany, Italy, Slovak Republic, Spain). There is no overall trend.



3.14.3:

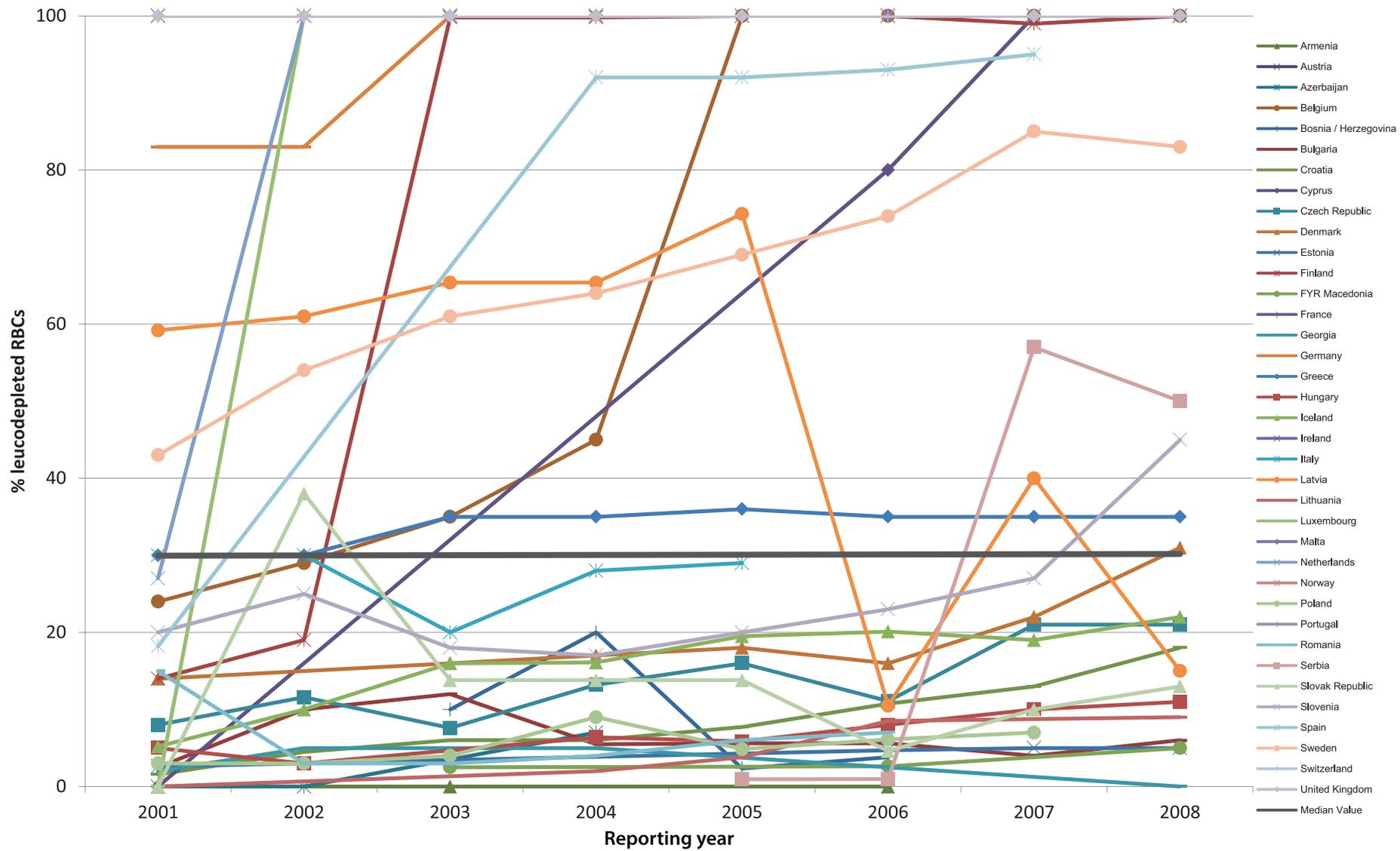
There are 28 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Belgium, Denmark, Greece, Sweden). There is no overall trend.

3.15. Percentage leucocyte depleted RBC

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	17									
Andorra										
Armenia	0		0			0				
Austria	100	100	100	100		100	100	100	-	-
Azerbaijan	0	0		7						
Belgium	24	29	35	45	100	100	100	100	1%	12.3
Bosnia / Herzegovina			10	20	2	4			-	-
Bulgaria	3	10	12	6	6	6	4	6	-	-
Croatia	2	5	6	6	8	11	13	18	1%	2.1
Cyprus	0					80	100	100	-	-
Czech Republic	8	12	8	13	16	11	21	21	5%	1.9
Denmark	14		16	17	18	16	22	31	5%	1.3
Estonia	3					5	5	5	-	-
Finland	14	19	100	100	100	100	99	100	10%	0.6
FYR Macedonia			3			3		5		
France	100	100	100	100	100	100	100	100	-	-
Georgia	2	5	5	5				0	-	-
Germany	83	83	100	100	100	100	100	100	10%	0.0
Greece	30	30	35	35	36	35	35	35	-	-
Hungary	5	3		6	6	8	10	11	5%	1.2
Iceland	5	10	16	16	20	20	19	22	1%	2.0
Ireland	100		100	100	100	100	100	100	-	-
Italy	30	30	20	28	29				-	-
Latvia	59	61	65	65	74	11	40	15	-	-
Liechtenstein										
Lithuania	0			2	4	9		9	5%	1.7
Luxembourg	0	100	100	100	100	100	100	100	-	-
Malta				100		100	100	100	-	-
Moldova					0					
Montenegro							10			
Netherlands	27	100	100	100	100	100	100	100	-	-
Norway	100	100	100	100	100	100	100	100	-	-
Poland	3	3	4	9	5	6	7		5%	0.7
Portugal	100				100	100				
Romania	15	3	3	4	6	7			-	-
Russian Federation										
San Marino										
Serbia					1	1	57	50	-	-
Slovak Republic	0	38	14	14	14	5	10	13	-	-
Slovenia	20	25	18	17	20	23	27	45	-	-
Spain	18			92	92	93	95		5%	1.8
Sweden	43	54	61	64	69	74	85	83	1%	5.0
Switzerland	100	100	100	100	100	100	100	100	-	-
Turkey	0									
Ukraine			5							
United Kingdom	100	100	100	100	100		100	100	-	-
Median value *	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	0.01%	0

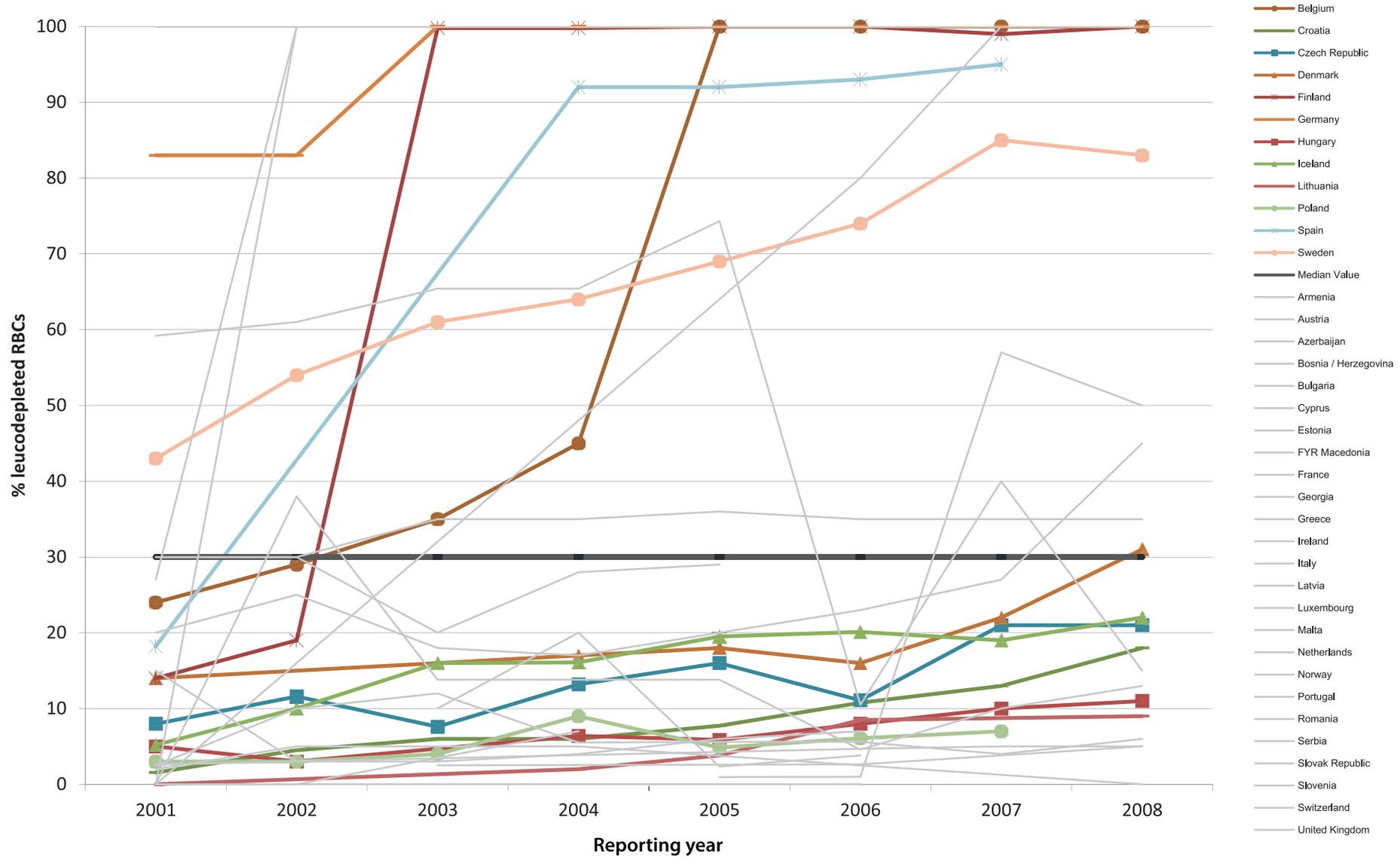
No data obtained

* Please note that the median trend has slope 0. This is due to the fact that 42% of the MS with 4 or more observations have reported a constant proportion of leucocyte depleted RBCs of 100%, which implies no change over time.



3.15.1:

There are 33 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 positive trends (Belgium, Croatia, Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Lithuania, Poland, Spain, Sweden), and no negative trends. There is an overall negative trend.



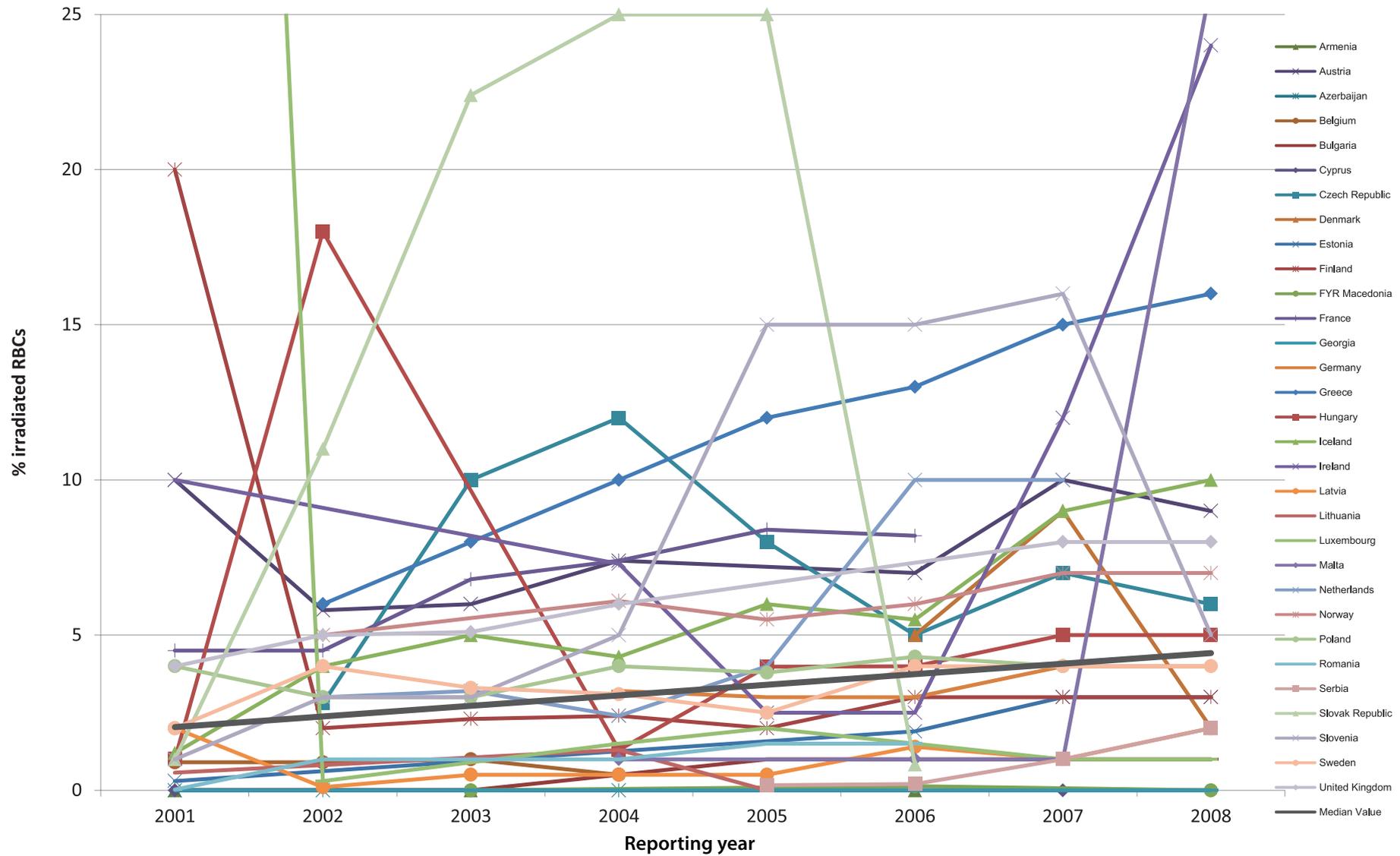
3.15.2:

There are 33 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 12 positive trends (Belgium, Croatia, Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Lithuania, Poland, Spain, Sweden). There is an overall negative trend.

3.16. Percentage irradiated RBC

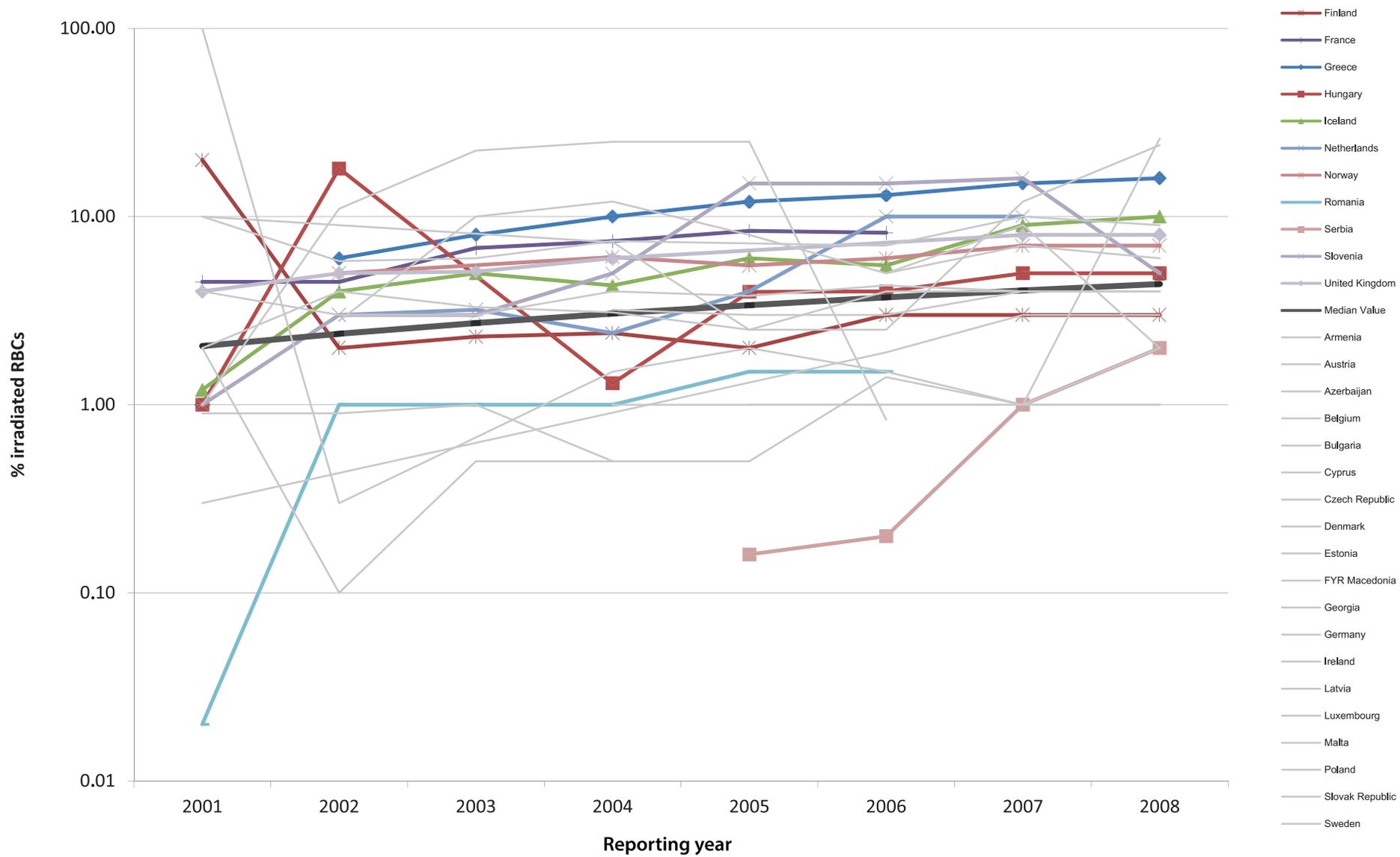
Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	0									
Andorra										
Armenia	0		0			0				
Austria	10.0	5.8	6.0	7.4		7.0	10.0	9.0	-	-
Azerbaijan	0	0		0						
Belgium	0.9	0.9	1.0	0.5					-	-
Bosnia / Herzegovina			50.0	2.0						
Bulgaria	0	0	0		1.0	1.0		1.0	-	-
Croatia		0						77.0		
Cyprus	0						0	0		
Czech Republic		2.8	10.0	12.0	8.0	5.0	7.0	6.0	-	-
Denmark						5.0	9.0	2.0		
Estonia	0.3					1.9	3.0	3.0	-	-
Finland	20.0	2.0	2.3	2.4	2.0	3.0	3.0	3.0	10%	0.2
FYR Macedonia			0			0.1		0		
France	4.5	4.5	6.8	7.4	8.4	8.2			5%	0.9
Georgia	0			0				0		
Germany				3.2	3.0	3.0	4.0	4.0	-	-
Greece		6.0	8.0	10.0	12.0	13.0	15.0	16.0	1%	1.7
Hungary	1.0	18.0		1.3	4.0	4.0	5.0	5.0	1%	0.6
Iceland	1.2	4.0	5.0	4.3	6.0	5.5	9.0	10.0	1%	1.0
Ireland	10.0			7.3	2.5	2.5	12.0	24.0	-	-
Italy				7.0	8.0					
Latvia	2.0	0.1	0.5	0.5	0.5	1.4	1.0	2.0	-	-
Liechtenstein										
Lithuania	0.6			1.3						
Luxembourg	100.0	0.3		1.5	2.0	1.5	1.0	1.0	-	-
Malta				1.0		1.0	1.0	26.0	-	-
Moldova					0					
Montenegro							0			
Netherlands		3.0	3.2	2.4	4.0	10.0	10.0		10%	1.6
Norway		5.0		6.1	5.5	6.0	7.0	7.0	10%	0.3
Poland	4.0	3.0	3.0	4.0	3.8	4.3	4.0		-	-
Portugal					15.0	13.0				
Romania	0.0	1.0	1.0	1.0	1.5	1.5			5%	0.3
Russian Federation										
San Marino										
Serbia					0.2	0.2	1.0	2.0	10%	0.7
Slovak Republic	1.0	11.0	22.4	25.0	25.0	0.8			-	-
Slovenia	1.0	3.0	3.0	5.0	15.0	15.0	16.0	5.0	5%	1.7
Spain										
Sweden	2.0	4.0	3.3	3.1	2.5	4.0	4.0	4.0	-	-
Switzerland										
Turkey	0									
Ukraine										
United Kingdom	4.0	5.0	5.1	6.0			8.0	8.0	1%	0.6
Median value	2.0	2.4	2.7	3.1	3.4	3.7	4.1	4.4	0.01%	0.3

No data obtained



3.16.1:

There are 24 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 11 positive trends (Finland, France, Greece, Hungary, Iceland, Netherlands, Norway, Romania, Serbia, Slovenia, United Kingdom), and no negative trends. There is an overall negative trend.



3.16.2:

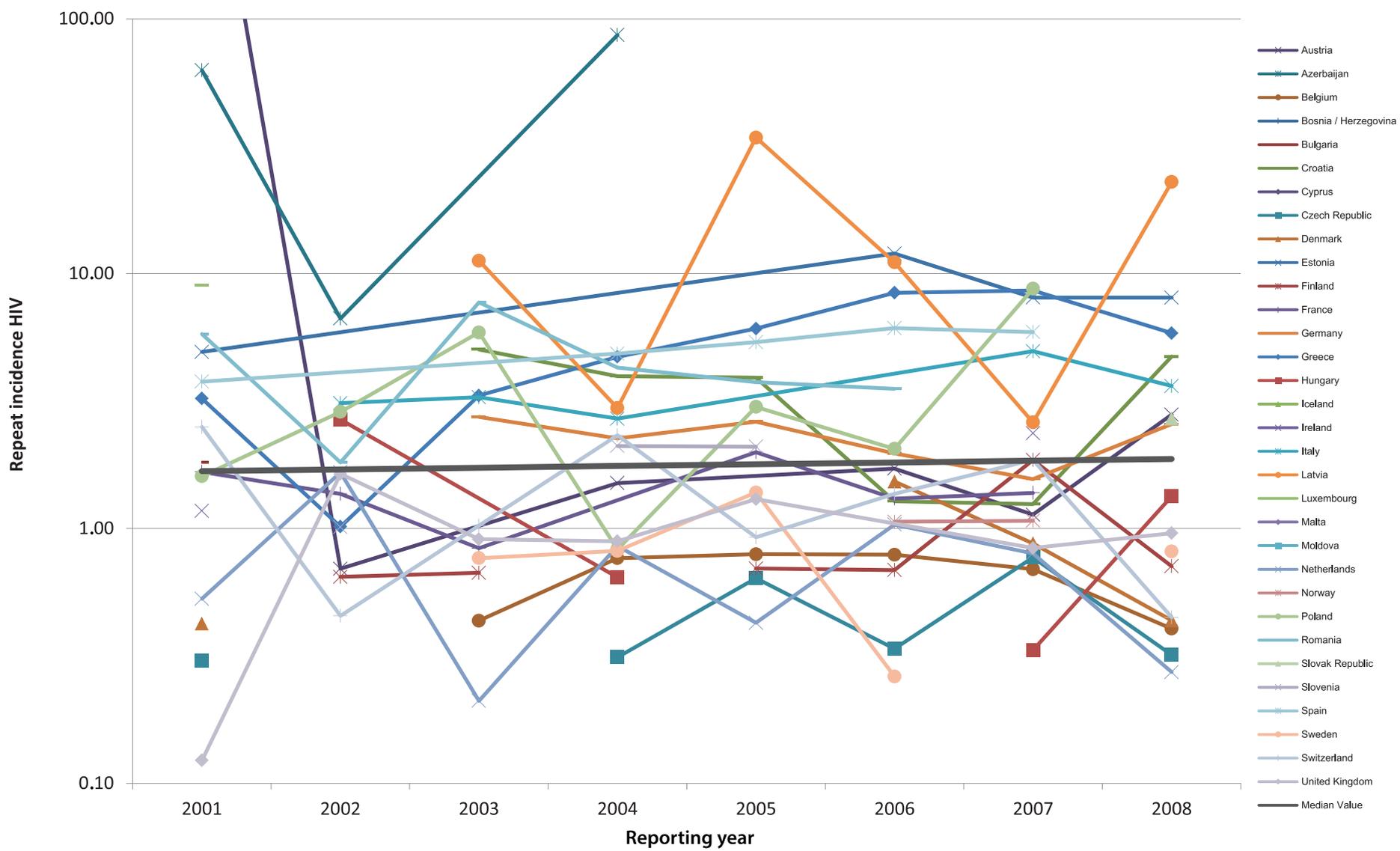
There are 24 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 11 positive trends (Finland, France, Greece, Hungary, Iceland, Netherlands, Norway, Romania, Serbia, Slovenia, United Kingdom). There is an overall negative trend.

3.17. HIV repeat donor incidence rate

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania										
Andorra										
Armenia			195.82							
Austria	928.00	0.70		1.51		1.72	1.13	2.80	-	-
Azerbaijan	62.81	6.67		86.38						
Belgium	0	0	0.43	0.76	0.79	0.79	0.69	0.40	-	-
Bosnia / Herzegovina			0	0	0	0			-	-
Bulgaria	1.82	0	0	0			0		-	-
Croatia		0	5.04	3.96	3.90	1.28	1.24	4.73	-	-
Cyprus						0	0	0		
Czech Republic	0.30	0	0	0.31	0.64	0.34	0.77	0.32	10%	0.1
Denmark	0.42		0	0.85	0	1.53	0.87	0.44	-	-
Estonia	4.93					11.98	8.06	8.05	-	-
Finland	0	0.65	0.67	0	0.70	0.69	1.86	0.71	5%	0.1
FYR Macedonia								74.86		
France	1.67	1.37	0.84		1.99	1.31	1.38		-	-
Georgia		0		42.86						
Germany			2.74	2.26	2.62	1.97	1.56	2.57	-	-
Greece	3.23	1.02	3.32	4.72	6.08	8.41	8.59	5.84	5%	1.1
Hungary	0	2.68		0.64	0	0	0.33	1.34	-	-
Iceland	0	0	0	0	0	0	0	0	-	-
Ireland	1.17			0	0	0	2.36	0	-	-
Italy		3.10	3.27	2.70			4.96	3.62	-	-
Latvia			11.23	2.97	34.19	11.08	2.61	22.89	-	-
Liechtenstein										
Lithuania		55.75		0						
Luxembourg	8.98	0	0	0	0	0	0	0	-	-
Malta						0	0	0		
Moldova	0				0		0			
Montenegro							0	0		
Netherlands	0.53	1.66	0.21	0.85	0.43	1.04	0.80	0.27	-	-
Norway		0	0	0	0	1.06	1.07	0	-	-
Poland	1.60	2.87	5.88	0.83	3.00	2.05	8.73		-	-
Portugal	3.84					4.93				
Romania	5.79	1.82	7.71	4.28	3.75	3.53			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	0	0	0	0	0	0	0	2.70	-	-
Slovenia		1.01	0	2.11	2.09	0	0	0	-	-
Spain	3.77			4.86	5.38	6.11	5.90		10%	0.4
Sweden	0	0	0.76	0.82	1.38	0.26	0	0.81	-	-
Switzerland	2.50	0.45	1.03	2.32	0.92	1.37	1.86	0.45	-	-
Turkey										
Ukraine										
United Kingdom	0.12	1.64	0.91	0.89	1.30		0.84	0.96	-	-
Median value	1.67	1.70	1.73	1.76	1.79	1.82	1.85	1.88	2%	102%

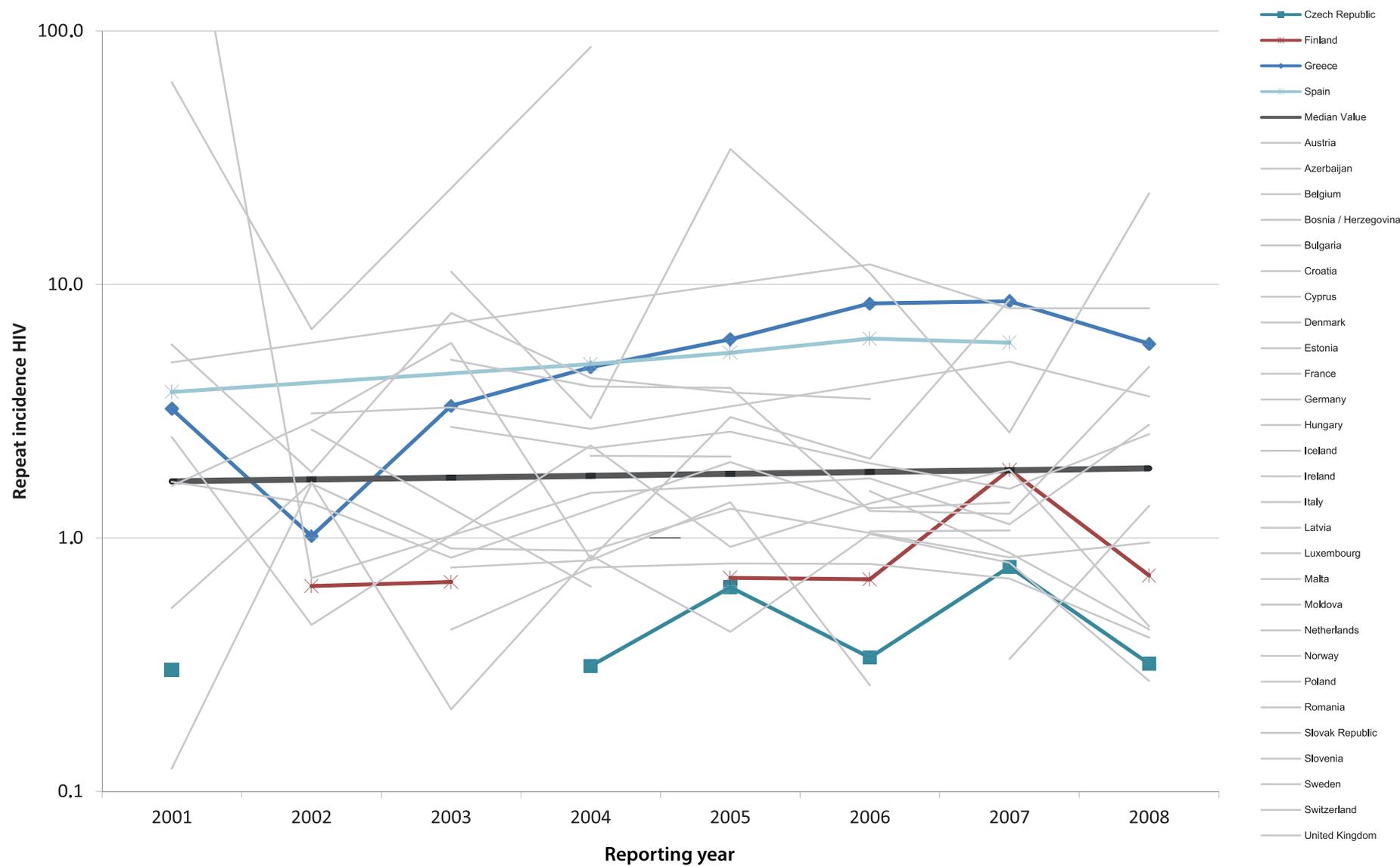
No data obtained

*Incidence rate as the number of infections per 100 000 donor years



3.17.1:

There are 28 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 positive trends (Czech Republic, Finland, Greece, Spain), and no negative trends. There is an overall negative trend.



3.17.2:

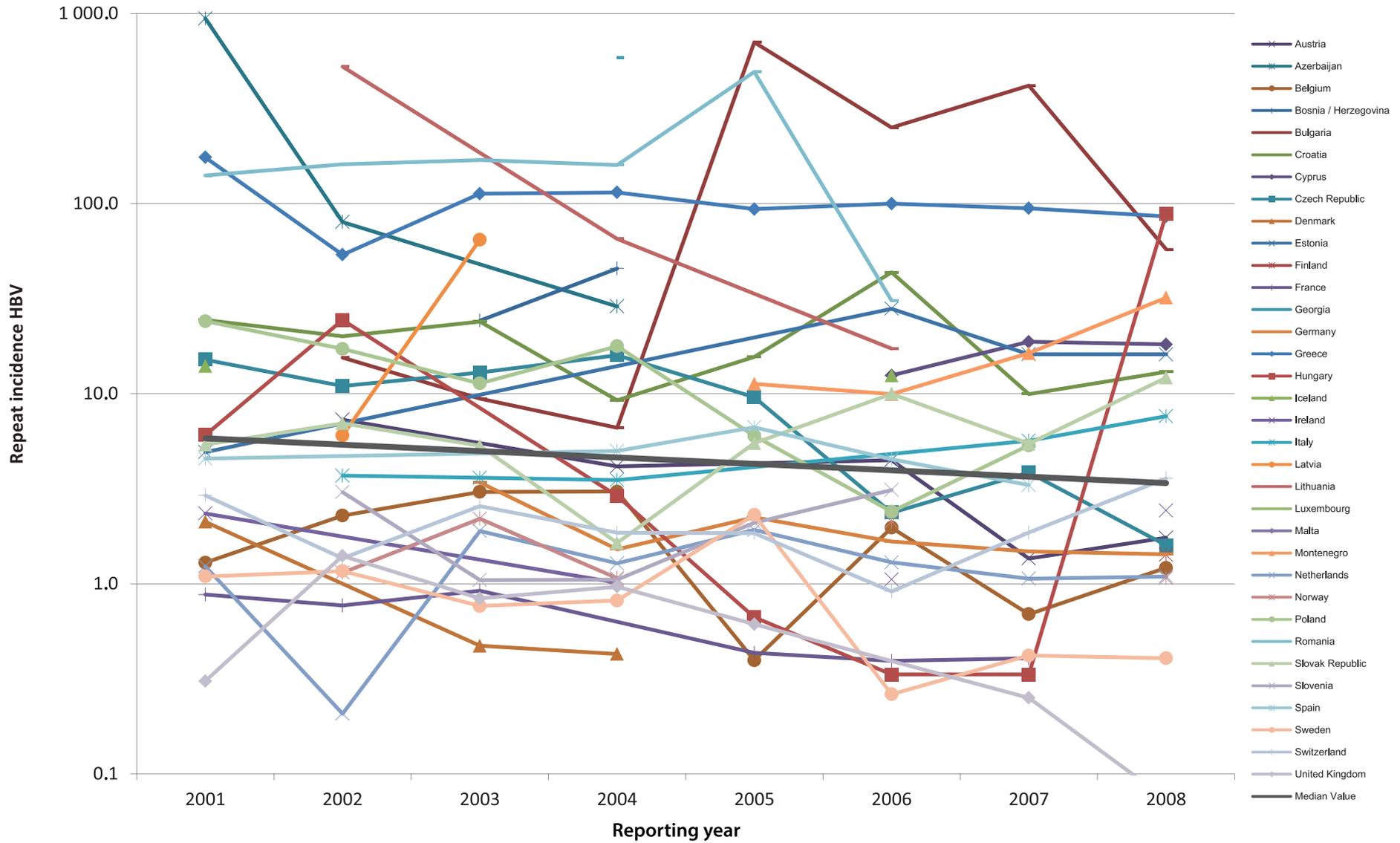
There are 28 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 positive trends (Czech Republic, Finland, Greece, Spain). There is an overall negative trend.

3.18. HBV repeat donor incidence rate

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	6913.2									
Andorra										
Armenia	878.3		6984.3							
Austria		7.3		4.1		4.5	1.4	1.7	-	-
Azerbaijan	942.6	80.0		28.8						
Belgium	1.3	2.3	3.0	3.1	0.4	2.0	0.7	1.2	-	-
Bosnia / Herzegovina			24.2	45.6	0	0			-	-
Bulgaria		15.5	9.4	6.6	705.2	251.0	417.3	57.4	-	-
Croatia	24.4	20.1	23.9	9.2	15.6	43.5	10.0	13.0	-	-
Cyprus						12.5	18.8	18.2		
Czech Republic	15.1	11.0	12.9	15.9	9.6	2.4	3.8	1.6	-5%	-2.0
Denmark	2.1		0.5	0.4	0	0	0	0	-1%	-0.1
Estonia	4.9					28.0	16.1	16.1	-	-
Finland	0	0	0	0	0	0	0	1.4	-	-
FYR Macedonia								1003.1		
France	0.9	0.8	0.9		0.4	0.4	0.4		-	-
Georgia	1127.2	0		585.7						
Germany			3.4	1.5	2.2	1.7	1.5	1.4	-10%	-0.3
Greece	175.0	53.9	112.6	114.5	93.5	99.9	94.5	85.5	-	-
Hungary	6.1	24.4		2.9	0.7	0.3	0.3	88.3	-	-
Iceland	14.0	0	0	0	0	12.5	0	0	-	-
Ireland	2.3			1.0	0	1.1	0	2.4	-	-
Italy		3.7	3.6	3.5			5.7	7.6	-	-
Latvia	0	6.0	64.6							
Liechtenstein										
Lithuania	0	525.0		65.1		17.2			-	-
Luxembourg	0	0	0	0	0	0	0	0	-	-
Malta						0	0	0		
Moldova	0						0			
Montenegro					11.3	9.9	16.3	32.0	-	-
Netherlands	1.2	0.2	1.9	1.3	1.9	1.3	1.1	1.1	-	-
Norway		1.1	2.2	1.1	0	2.1	0	1.1	-	-
Poland	24.1	17.2	11.3	17.8	6.0	2.4	5.3		-5%	-3.6
Portugal	6.4					3.8				
Romania	140.6	161.1	169.6	159.7	492.5	30.9			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	5.4	7.0	5.3	1.6	5.5	10.0	5.5	12.1	-	-
Slovenia		3.0	1.0	1.1	2.1	3.1	0	0	-	-
Spain	4.6			5.0	6.7	4.5	3.3		-	-
Sweden	1.1	1.2	0.8	0.8	2.3	0.3	0.4	0.4	-	-
Switzerland	2.9	1.4	2.6	1.9	1.8	0.9	1.9	3.6	-	-
Turkey										
Ukraine										
United Kingdom	0.3	1.4	0.8	1.0	0.6		0.3	0.1	-	-
Median value	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	-0.01%	92%

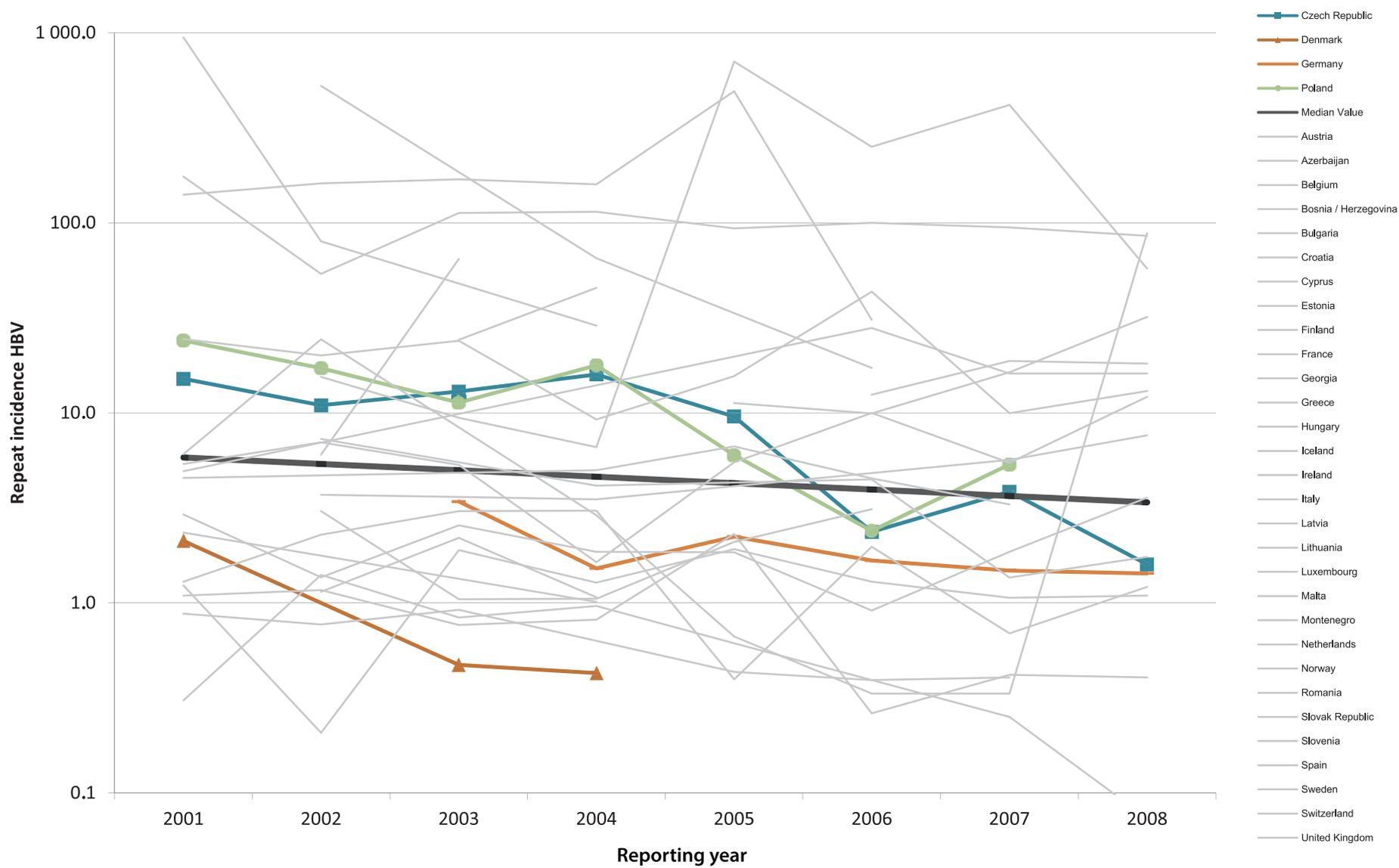
No data obtained

*Incidence rate as the number of infections per 100 000 donor years



3.18.1:

There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, Denmark, Germany, Poland). There is an overall negative trend.



3.18.2:

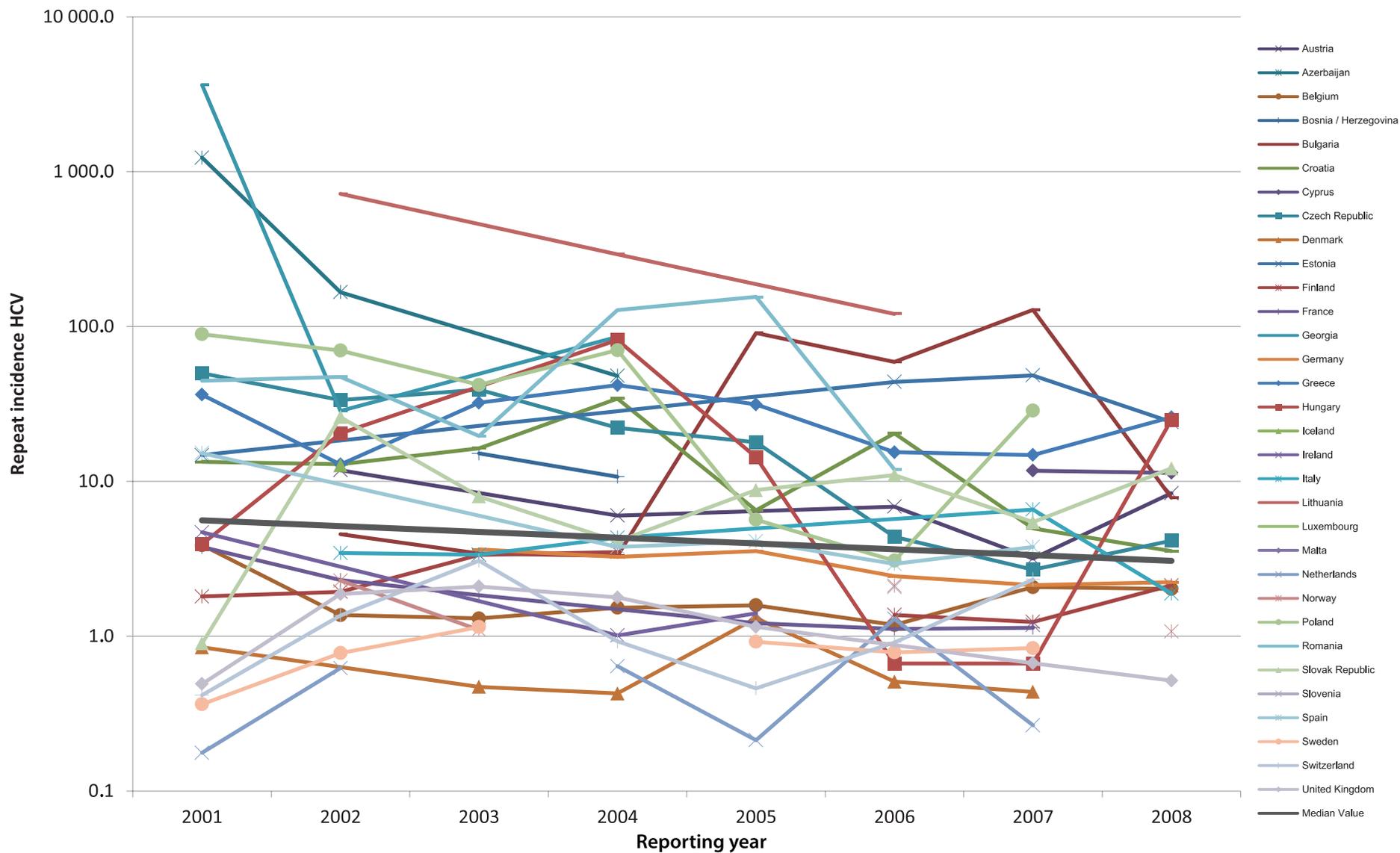
There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, Denmark, Germany, Poland). There is an overall negative trend.

3.19. HCV repeat donor incidence rate

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	1367									
Andorra										
Armenia	1192		4439							
Austria		11.8		6.0		6.9	3.2	8.4	-	-
Azerbaijan	1231	166.7		48.0						
Belgium	3.9	1.4	1.3	1.5	1.6	1.2	2.1	2.0	-	-
Bosnia / Herzegovina			15.2	10.7	0	0			-	-
Bulgaria		4.6	3.4	3.3	90.9	59.0	128.2	7.8	-	-
Croatia	13.4	12.9	16.4	34.3	6.5	20.5	5.0	3.5	-	-
Cyprus						0	11.7	11.4		
Czech Republic	49.8	33.5	39.1	22.2	17.9	4.4	2.7	4.1	-1%	-6.8
Denmark	0.8		0.5	0.4	1.3	0.5	0.4	0	-	-
Estonia	14.8					43.9	48.4	24.2	-	-
Finland	1.8	1.9	3.4	3.5	0	1.4	1.2	2.1	-	-
FYR Macedonia								224.6		
France	3.8	2.3	1.8		1.2	1.1	1.1		-5%	-0.3
Georgia	3629	28.6		85.7						
Germany			3.6	3.3	3.5	2.4	2.1	2.2	-10%	-0.4
Greece	36.3	12.9	32.2	41.8	31.4	15.4	14.8	26.0	-	-
Hungary	3.9	20.4		82.0	14.3	0.7	0.7	25.0	-	-
Iceland	0	12.7	0	0	0	0	0	0	-	-
Ireland	4.7			1.0	1.4	0	1.2	0	-	-
Italy		3.4	3.4	4.3			6.6	1.9	-	-
Latvia		21.1	435.2							
Liechtenstein										
Lithuania		720.1		292.9		120.7				
Luxembourg	0	0	0	0	0	0	0	0	-	-
Malta						0	0	0		
Moldova	0						0			
Montenegro					22.5					
Netherlands	0.2	0.6	0	0.6	0.2	1.3	0.3	0	-	-
Norway		2.3	1.1	0	0	2.1	0	1.1	-	-
Poland	89.4	70.1	42.0	70.3	5.7	3.1	28.7		-10%	-13.9
Portugal	0					10.2				
Romania	44.7	47.3	19.6	127.6	155.6	11.9			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	0.9	26.0	8.0	4.1	8.8	11.0	5.5	12.1	-	-
Slovenia		0	0	0	0	2.1	0	0	-	-
Spain	15.2			3.8	4.1	2.9	3.8		-	-
Sweden	0.4	0.8	1.1	0	0.9	0.8	0.8	0	-	-
Switzerland	0.4	1.4	3.1	0.9	0.5	0.9	2.3	0	-	-
Turkey										
Ukraine										
United Kingdom	0.5	1.9	2.1	1.8	1.1		0.7	0.5	-	-
Median value	5.6	5.1	4.7	4.3	4.0	3.6	3.3	3.1	-0.1%	92%

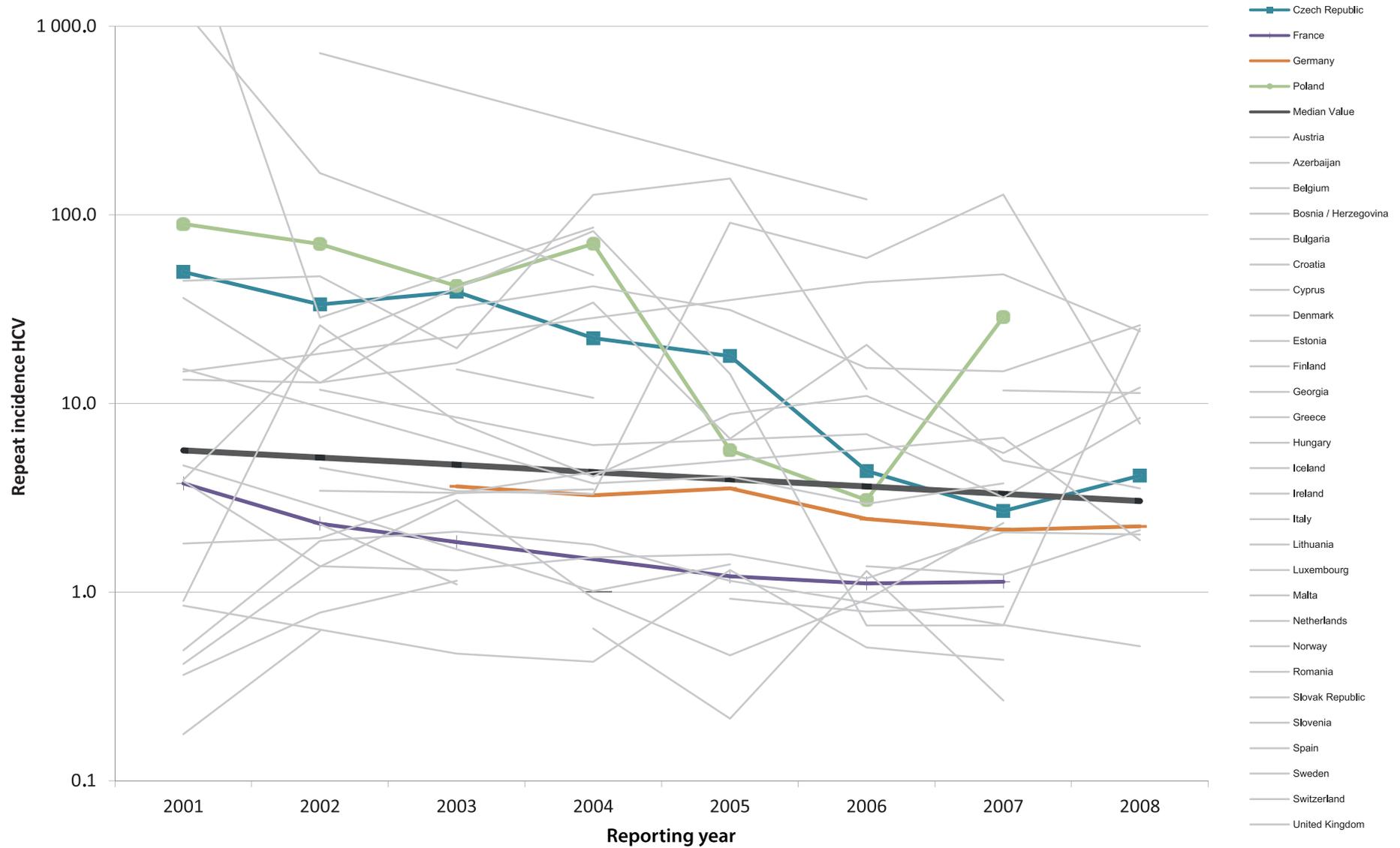
No data obtained

*Incidence rate as the number of infections per 100 000 donor years



3.19.1:

There are 27 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, France, Germany, Poland), and no positive trends. There is an overall negative trend.



3.19.2:

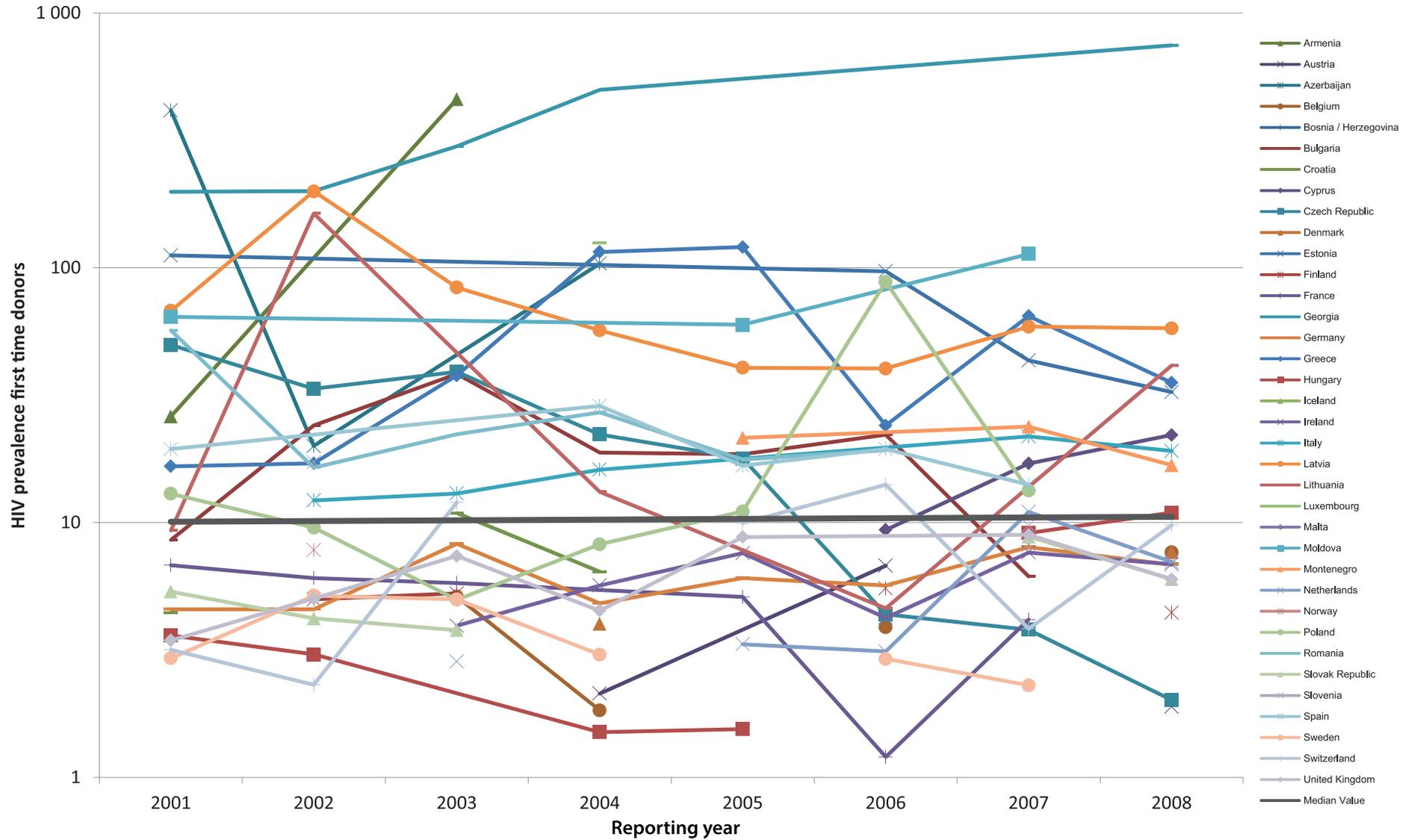
There are 27 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, France, Germany, Poland). There is an overall negative trend.

3.20. HIV first time donor prevalence

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	53.6									
Andorra		0								
Armenia	26.1		459.3			0		1.9	-	-
Austria		0		2.1		6.8	0			
Azerbaijan	415.0	20.0		103.9						
Belgium	0	0	5.1	1.8	0	3.9	0	7.7	-	-
Bosnia / Herzegovina			0	0	0	0			-	-
Bulgaria	8.5	24.1	38.3	18.8	18.5	22.1	6.1		-	-
Croatia	4.4	0	10.9	6.4	0	0	0	6.9	-	-
Cyprus						9.4	17.1	22.1		
Czech Republic	49.8	33.5	39.1	22.2	17.9	4.4	3.8	2.0	-1%	-6.9
Denmark	0		0	4.0		0		7.7	-	-
Estonia	111.9					97.0	43.3	32.5	-10%	-11.4
Finland	0	5.0	5.3	0	0	5.5	0	4.4	-	-
FYR Macedonia			633.0					528 820		
France	6.8	6.1	5.8		5.1	1.2	4.2		-5%	-0.4
Georgia	198.7	200.0	300.0	500.0				747.0	5%	90.3
Germany	4.6	4.6	8.3	4.8	6.1	5.7	8.0	6.8	-	-
Greece	16.6	17.1	37.8	115.4	120.6	24.1	64.7	35.4	-	-
Hungary	3.6	3.0		1.5	1.5	0	9.1	10.9	-	-
Iceland	0	0	0	0	0	0	0	0	-	-
Ireland	0		3.9	5.7	7.6	4.2	7.6	6.9	10%	0.9
Italy		12.2	13.0	16.1			21.8	19.1	10%	1.6
Latvia	67.8	199.5	83.8	56.9	40.6	40.2	58.8	57.9	-	-
Liechtenstein										
Lithuania	9.3	163.3		13.2		4.6		41.4	-	-
Luxembourg	0	0	0	124.8	0	0	0	0	-	-
Malta				0			0	0		
Moldova	64.3				59.8		113.2			
Montenegro					21.5		23.8	16.8		
Netherlands	0	0	2.8	0	3.3	3.1	11.0	7.0	5%	1.1
Norway		7.8	0	0	0	0	8.2	0	-	-
Poland	13.0	9.6	5.0	8.2	11.1	88.1	13.4		-	-
Portugal	34.3					41.2				
Romania	56.8	16.5	22.2	27.1	17.7	19.3			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	5.4	4.2	3.8	0	0	0	8.8	6.0	-	-
Slovenia		17.3	0	0	0	0	9.7	0	-	-
Spain	19.4			28.7	16.7	19.5	14.1		-	-
Sweden	2.9	5.2	5.0	3.0	0	2.9	2.3	0	-5%	-0.6
Switzerland	3.2	2.3	12.0	0	10.0	14.1	3.8	9.8	-	-
Turkey										
Ukraine										
United Kingdom	3.4	5.0	7.4	4.5	8.8		9.0	6.0	-	-
Median value	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	55%	

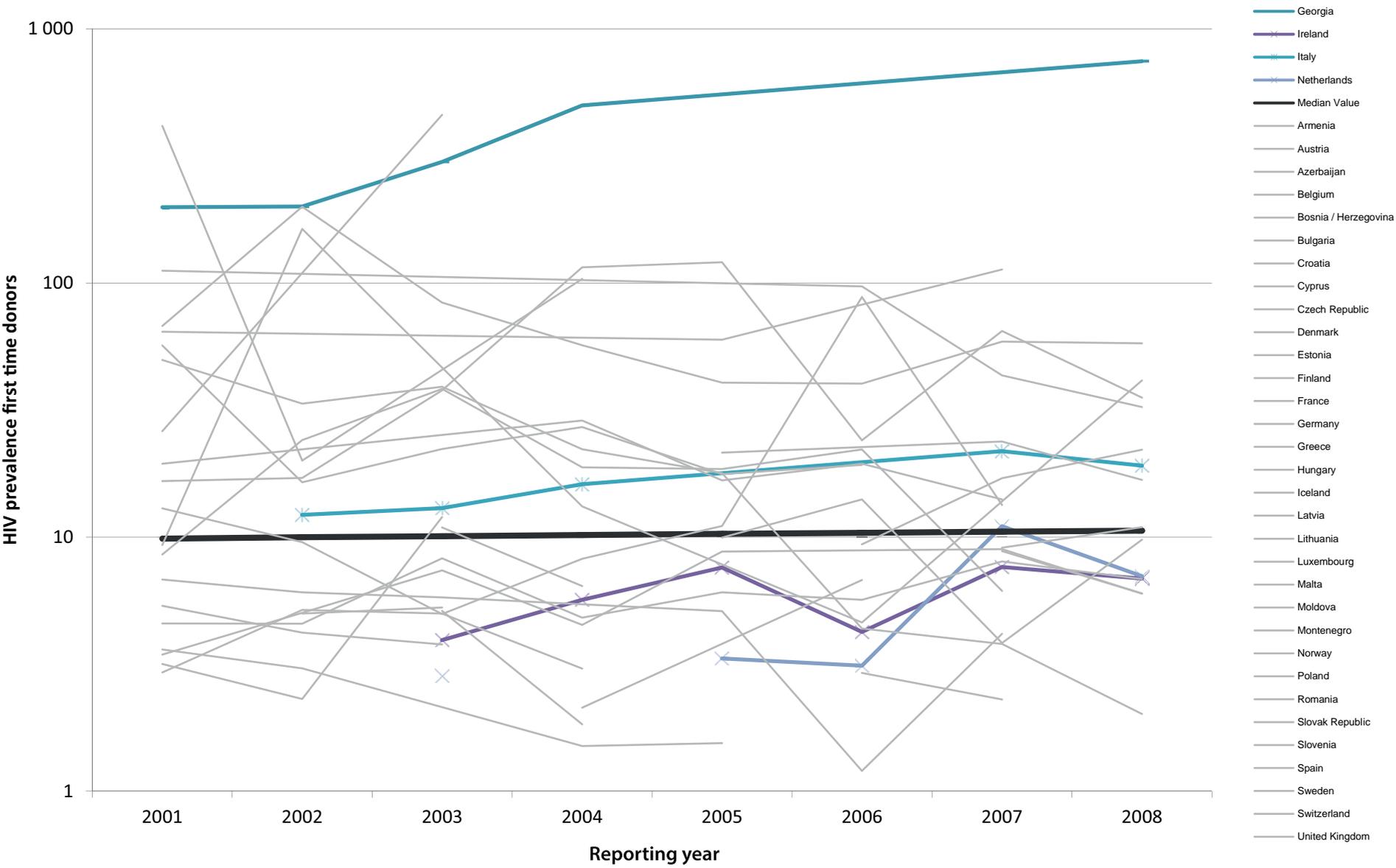
No data obtained

*Prevalence as the number of infections per 100 000 donors

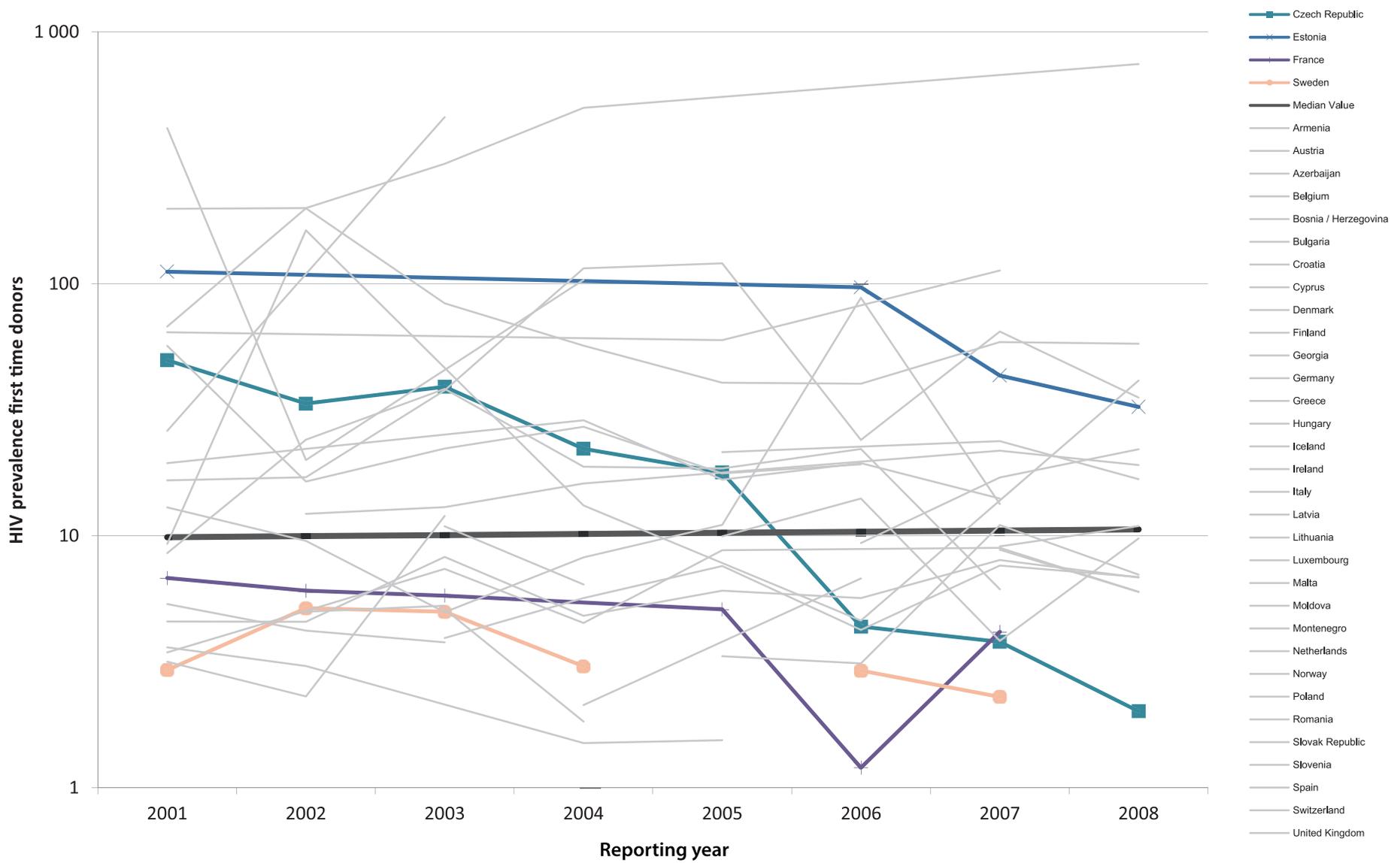


3.20.1:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, Estonia, France, Sweden), and 4 positive trends (Georgia, Ireland, Italy, Netherlands). There is no overall trend.



3.20.2: There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 positive trends (Georgia, Ireland, Italy, Netherlands). There is no overall trend.



3.20.3:

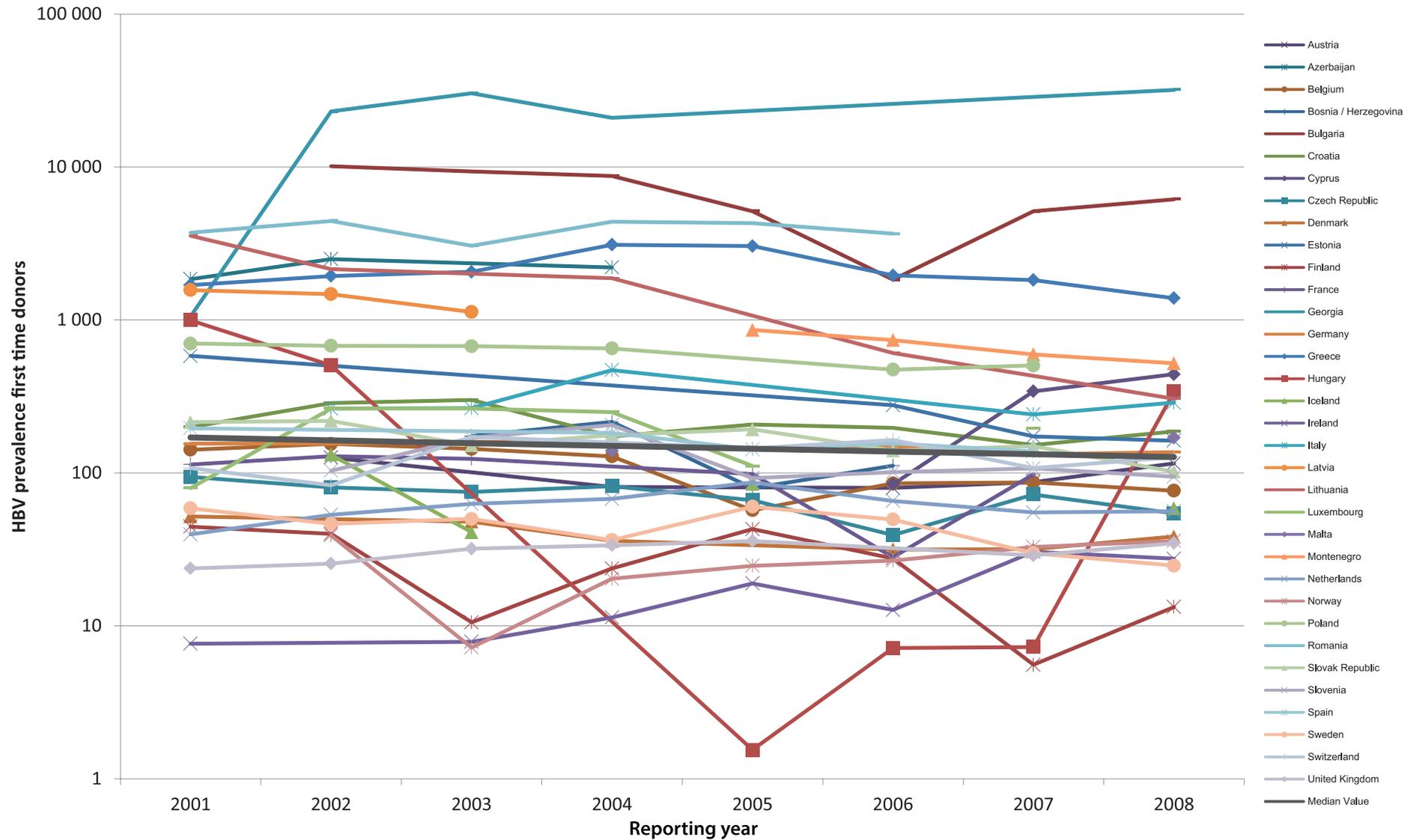
There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 4 negative trends (Czech Republic, Estonia, France, Sweden). There is no overall trend.

3.21. HBV first time donor prevalence

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	7212									
Andorra		0								
Armenia	1749		565							
Austria		126		81		80	87	115	-	-
Azerbaijan	1851	2500		2204						
Belgium	142	155	144	128	57	85	87	77	-10%	-13
Bosnia / Herzegovina			174	216	80	112			-	-
Bulgaria		10 129	9356	8737	5146	1833	5137	6149	-10%	-772
Croatia	199	287	300	173	207	197	152	187	-	-
Cyprus						84	341	441		
Czech Republic	94	80	75	82	66	39	72	54	-5%	-5
Denmark	52		48	36		32	32	38	-	-
Estonia	582					277	173	163	-10%	-60
Finland	45	40	11	24	43	28	6	13	-	-
FYR Macedonia			2544					528 820		
France	114	128	124		98	28	98		-	-
Georgia	1057	23 100	30 300	21 000				31.919	-	-
Germany	155	155	160	157	144	149	133	137	-	-
Greece	1691	1939	2064	3104	3044	1957	1823	1388	-	-
Hungary	994	505			2	7	7	339	-	-
Iceland	0	131	41	0	85	0	0	59	-	-
Ireland	8		8	11	19	13	31	27	5%	3
Italy		263	265	470			241	288	-	-
Latvia	1568	1477	1127							
Liechtenstein										
Lithuania	3557	2148		1874		609		306	-5%	-428
Luxembourg	80	264	264	250	111	0	197	0	-	-
Malta				139			0	170		
Moldova	23 039						12 608			
Montenegro					861	739	595	521	-10%	-118
Netherlands	40	53	63	68	87	66	55	56	-	-
Norway		39	7	20	25	27	33	36	-	-
Poland	701	678	674	652		474	504		-5%	-33
Portugal	262					94				
Romania	3724	4442	3055	4389	4291	3666			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	215	219	151	176	193	140	150	102	-5%	-14
Slovenia		104	170	206	92	101	107	94	-	-
Spain	196			183	143	156	138		-10%	-11
Sweden	59	47	50	36	60	50	30	25	-	-
Switzerland	108	83	172	158	145	164	107	127	-	-
Turkey										
Ukraine										
United Kingdom	24	26	32	34	36		29	35	10%	2
Median value	163	158	152	147	142	137	133	128	-0.01%	97%

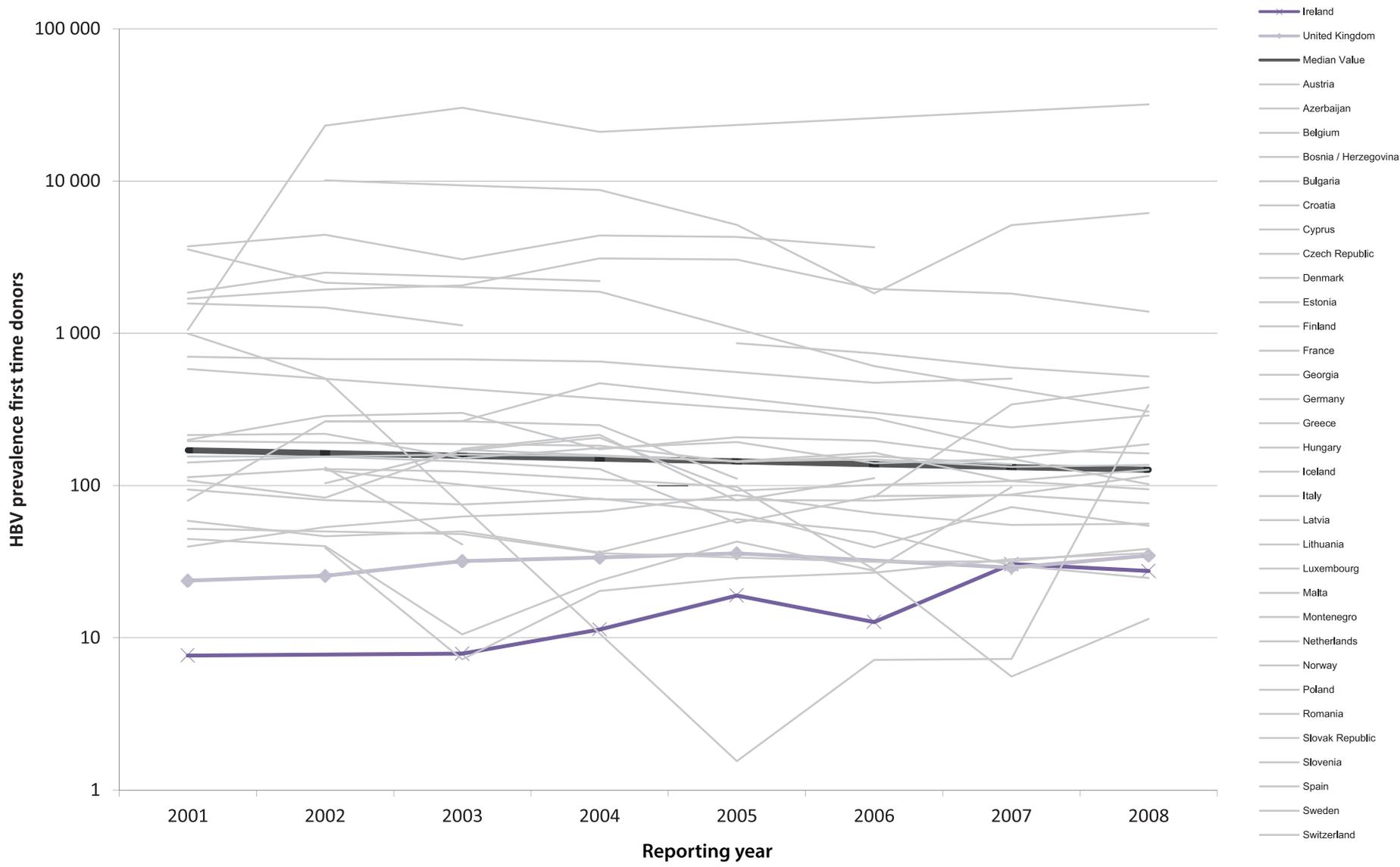
No data obtained

*Prevalence as the number of infections per 100 000 donors



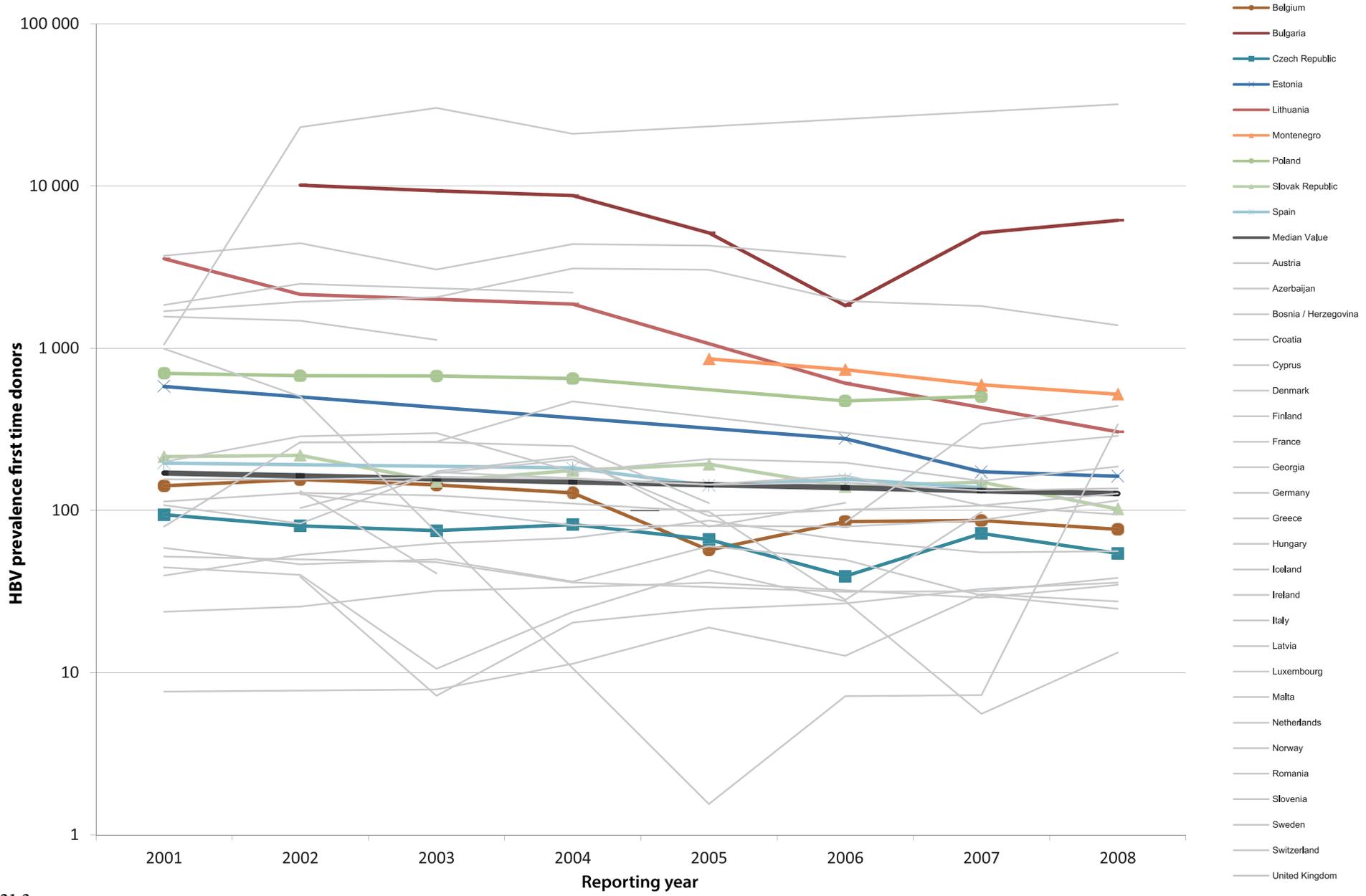
3.21.1:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 negative trends (Belgium, Bulgaria, Czech Republic, Estonia, Lithuania, Montenegro, Poland, Slovak Republic, Spain), and 2 positive trends (Ireland, United Kingdom). There is an overall negative trend.



3.21.2:

There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 2 positive trends (Ireland, United Kingdom). There is an overall negative trend.



3.21.3:

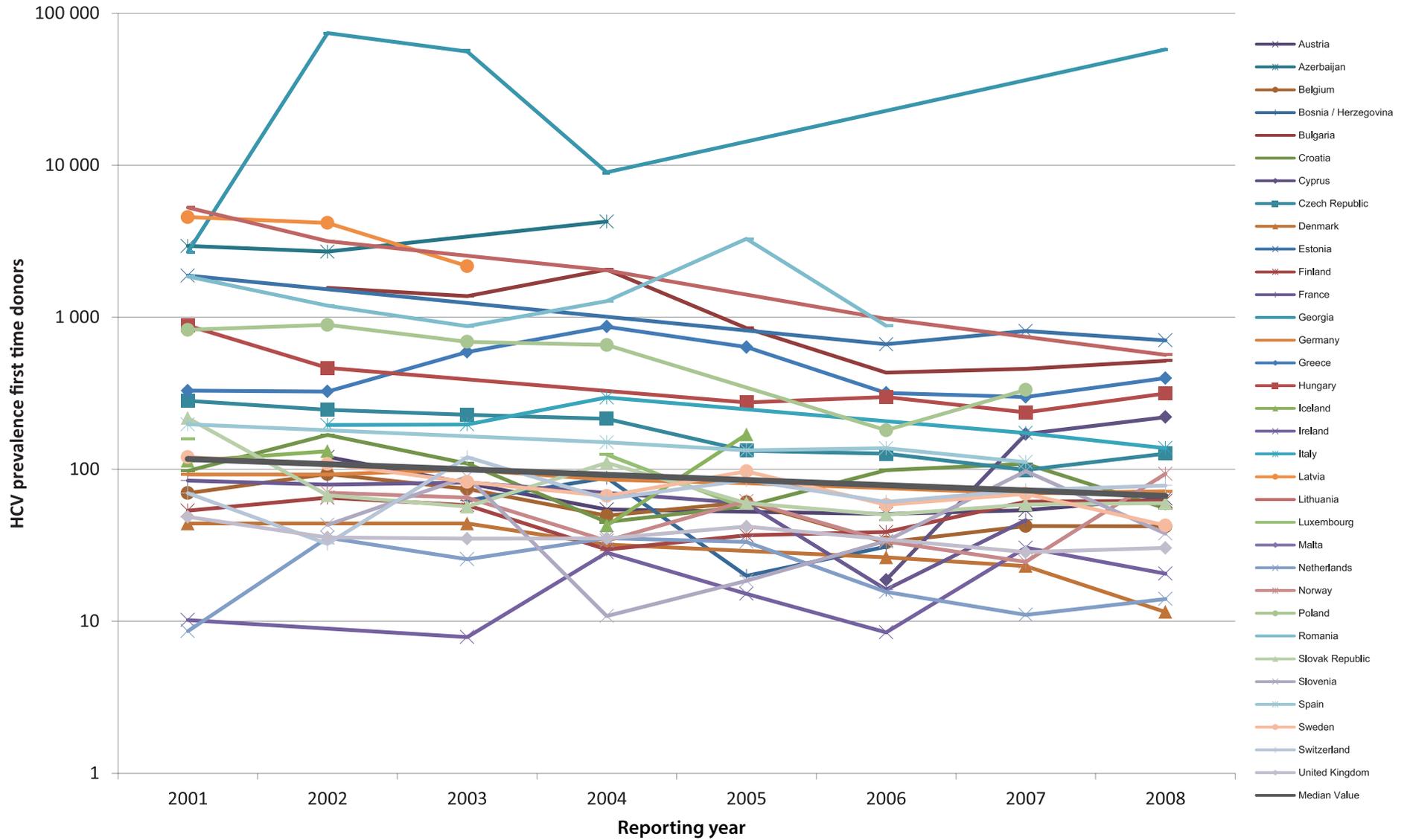
There are 30 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 negative trends (Belgium, Bulgaria, Czech Republic, Estonia, Lithuania, Montenegro, Poland, Slovak Republic, Spain). There is an overall negative trend.

3.22. HCV first time donor prevalence

Country	Year								Trend	
	2001	2002	2003	2004	2005	2006	2007	2008	p-value	Slope
Albania	509									
Andorra		0								
Armenia	2924		1872							
Austria		121		54		51	54	64	-	-
Azerbaijan	2947	2700		4259						
Belgium	70	93	74	50	61	33	42	42	-5%	-7
Bosnia / Herzegovina			62	88	20	31			-	-
Bulgaria		1559	1377	2060	849	433	458	518	-	-
Croatia	97	168	109	45	57	98	109	55	-	-
Cyprus						19	171	221		
Czech Republic	283	247	228	215	132	127	99	127	-1%	-27
Denmark	44		44	32		26	23	12	-1%	-5
Estonia	1880					665	812	705	-	-
Finland	53	65	58	30	37	39	61	62	-	-
FYR Macedonia			1725					528 820		
France	84	79	82		60	16	46		-10%	-7
Georgia	2683	74 200	56 100	9000				57 895	-	-
Germany	93	93	99	85	81	75	69	72	-5%	-4
Greece	329	325	591	868	636	318	299	398	-	-
Hungary	882	464			275	299	236	315	-	-
Iceland	114	131	0	43	169	0	59	0	-	-
Ireland	10		8	28	15	8	31	21	-	-
Italy		196	197	296			174	138	-	-
Latvia	4561	4180	2170							
Liechtenstein										
Lithuania	5261	3169		2039		978		567	-5%	-556
Luxembourg	159	0	0	125	55	0	0	0	-	-
Malta				35			0	0		
Moldova	15 395						5514			
Montenegro					689	585				
Netherlands	9	36	26	35	33	16	11	14	-	-
Norway		70	65	34	62	33	25	93	-	-
Poland	827	891	690	657		181	333		-10%	-108
Portugal	209					165				
Romania	1858	1191	874	1279	3282	881			-	-
Russian Federation										
San Marino										
Serbia										
Slovak Republic	217	67	57	110	60	50	59	60	-	-
Slovenia		43	89	11	18	34	97	38	-	-
Spain	198			151	133	138	111		-10%	-14
Sweden	120	109	83	67	97	58	69	43	-5%	-10
Switzerland	70	32	120	64	85	61	73	78	-	-
Turkey										
Ukraine										
United Kingdom	49	36	35	35	42		29	30	-	-
Median value	117	108	100	92	85	79	73	67	-0.01%	92%

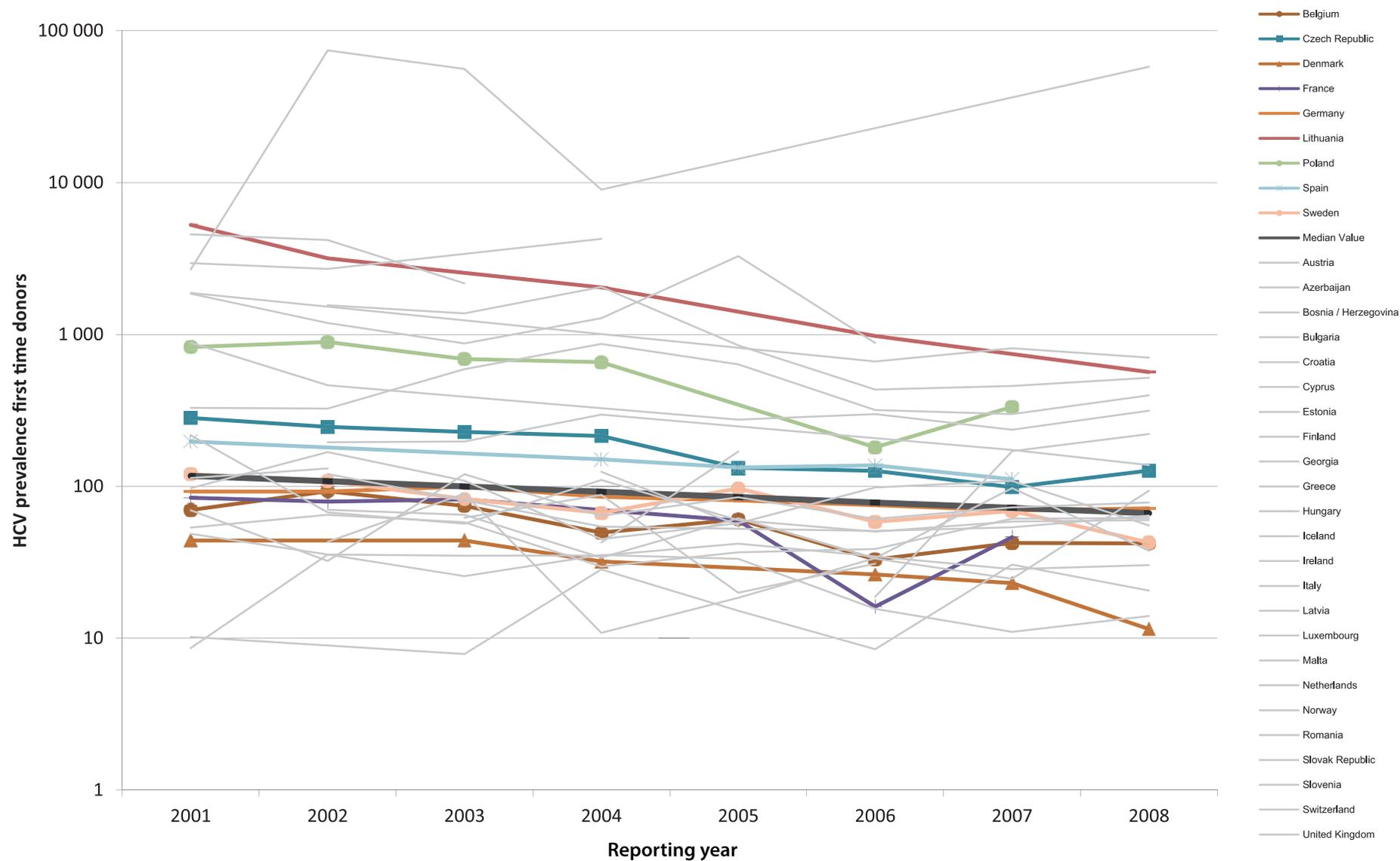
No data obtained

*Prevalence as the number of infections per 100 000 donors



3.22.1:

There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 negative trends (Belgium, Czech Republic, Denmark, France, Germany, Lithuania, Poland, Spain, Sweden), and no positive trends. There is an overall negative trend.



3.22.2:

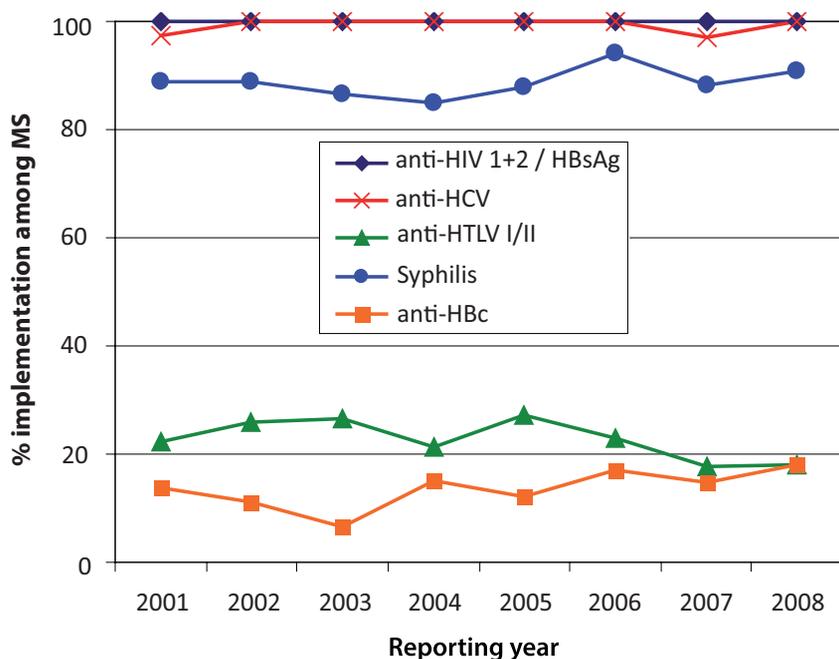
There are 29 countries that supplied sufficient data to perform a trend analysis. Of these, there is an indication of 9 negative trends (Belgium, Czech Republic, Denmark, France, Germany, Lithuania, Poland, Spain, Sweden). There is an overall negative trend.

3.23. Screening for infectious agents

In this section aggregated results of the level of implementation of various screening tests among MS is presented and analysed.

3.23.1. Serological testing

In the graph and table below, the proportion of MS is shown per reporting year that test all blood donations with the blood screening tests as indicated. There are no significant trends in these data.



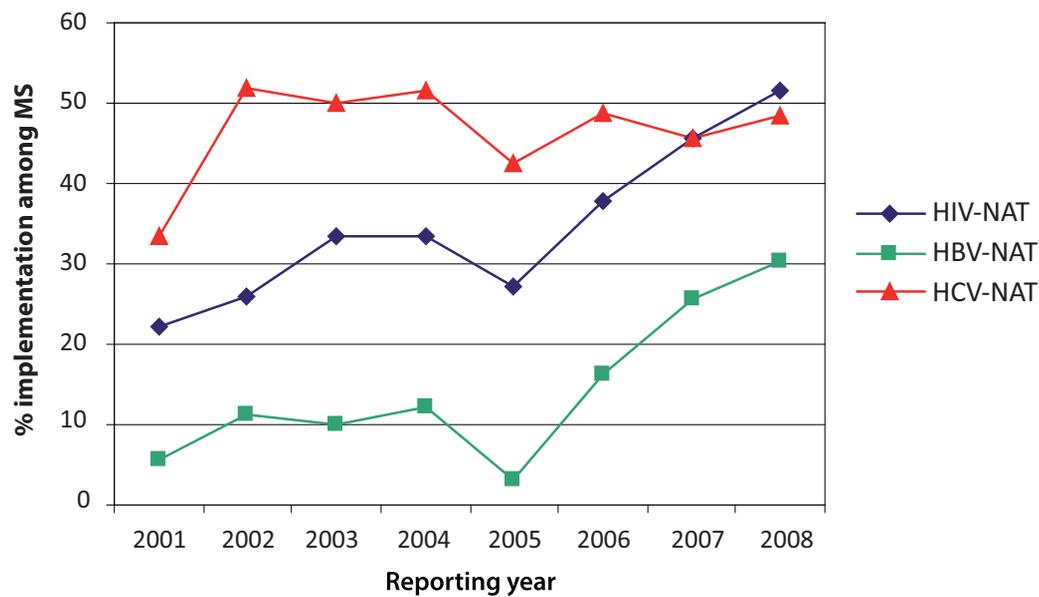
Reporting year	Test*				
	Anti-HIV 1+2 / HBsAg	Anti-HCV	Anti-HTLV I/II	Syphilis	Anti-HBc
2001	100	97	22	89	14
2002	100	100	26	89	11
2003	100	100	27	87	7
2004	100	100	21	85	15
2005	100	100	27	88	12
2006	100	100	23	94	17
2007	100	97	18	88	15
2008	100	100	18	91	18

* Data refer to the proportion of reporting MS that have implemented screening of all donations with the test indicated

3.23.2. NAT testing

In the graph and table below, the application of minipool-Nucleic Acid Amplification Techniques (NAT) testing on blood donations is given. For each year the proportion of reporting MS that have implemented screening of all blood donations with respective NAT tests is presented, excluding NAT screening by establishments for plasma fractionation.

Statistically significant trends are found for HIV-NAT (p -value 1 %, an increase of 3.8 % per year) and for HBV-NAT (p -value 3 %, an increase of 3.1 % per year). When only considering the reporting years from 2005 to 2008, there is obviously less power for the trend (p -values increase to 8 % for both NAT tests), but the slope estimates become 8 % for HIV and 9 % for HCV.



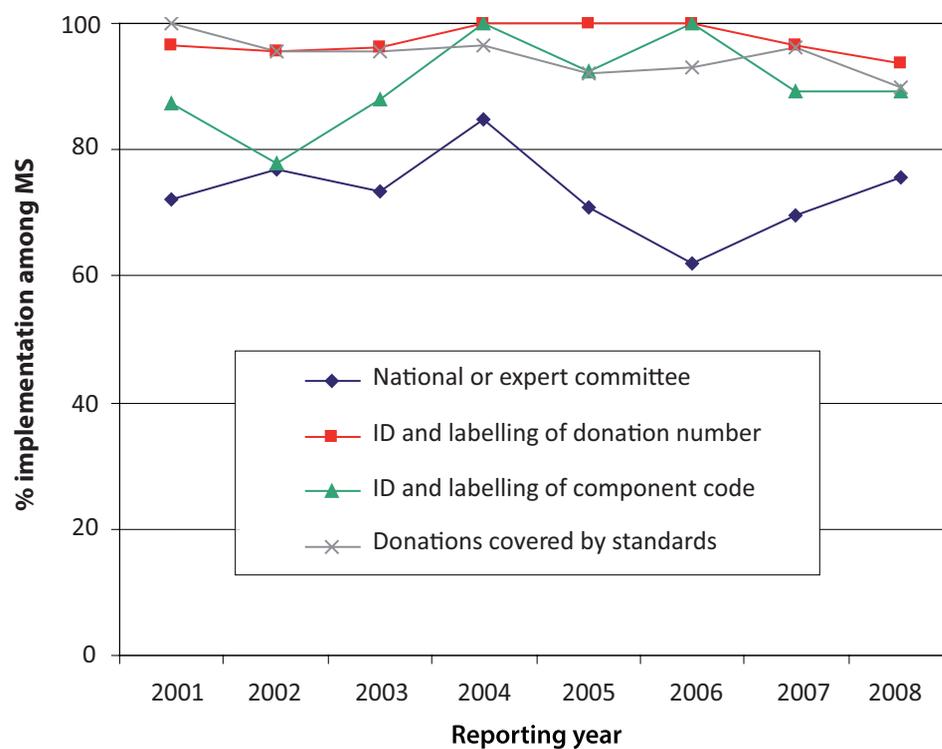
Reporting year	Test*		
	HIV-NAT	HBV-NAT	HCV-NAT
2001	22	6	33
2002	26	11	52
2003	33	10	50
2004	33	12	52
2005	27	3	42
2006	38	16	49
2007	46	26	46
2008	52	30	48

* Data refer to the proportion of reporting MS that have implemented screening of all donations with the test indicated

3.24. Quality Assurance and labelling

In this section, the level of implementation of Quality Assurance (QA) procedures, review programmes and labelling procedures is presented. The proportion of MS each year that have implemented various programmes is shown.

There is no indication of a trend in any of the procedures given below.

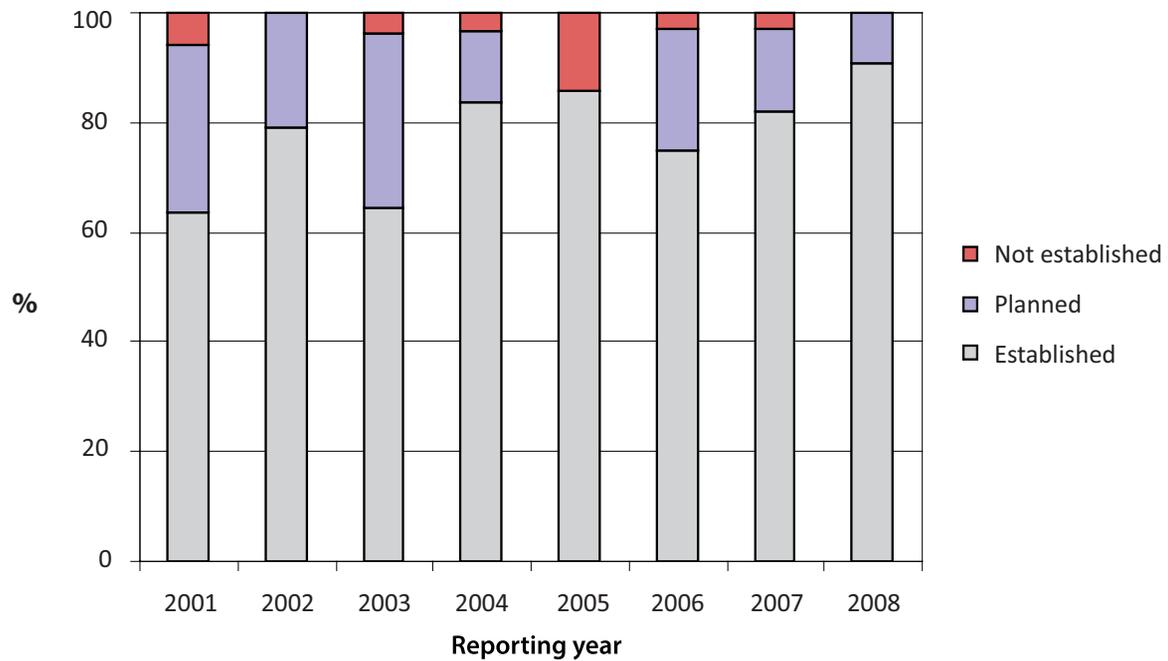


Reporting year	Level of implementation*			
	National or expert committee	ID and labelling of donation number	ID and labelling of component code	Donations covered by standards‡
2001	72	97	88	100
2002	77	96	78	96
2003	73	96	88	96
2004	85	100	100	96
2005	71	100	92	92
2006	62	100	100	93
2007	70	97	89	96
2008	76	94	89	87

* Data refer to the proportion of reporting MS that have implemented the procedures indicated

‡ Standards refer to GMP, ISO or other

In the figure and table below, the status of implementation of managed quality assurance systems is shown. The level (planned) of implementation among reporting MS each year is presented. There has been an increase in the proportion of established QS over the reporting period (p -value 6 %, increase of 2.3 % per year).



Reporting year	Level of implementation		
	Not established	Planned	Established
2001	6	30	64
2002	0	21	79
2003	4	32	64
2004	3	13	84
2005	14	0	86
2006	3	22	75
2007	3	15	82
2008	0	9	91

* Data refer to the proportion of reporting MS that have reported the indicated level of implemented of a maintained QA system

4. DISCUSSION, CONCLUSION AND FUTURE PLANS

The work presented here is intended to provide information on trends in the collection, testing and use of blood and blood components in Europe. The basis for the analysis is data provided by MS over the reporting period 2001-2008. Analysis of the data obtained from consecutive years enables identification of trends in the blood supply in Europe. Not only does it allow quantification of changes in the blood supply on a European level, but it also allows comparison of trends amongst MS. Integration and reporting of data collected over a number of years might lead to new insights. It also provides additional means for data quality control.

On basis of the data provided in the reporting years 2001-2008, the following observations can be made:

- The proportion of annually reporting countries seems to fluctuate around an average of 73 %. However, there is a fairly constant base of reporting countries, which is a requirement for obtaining robust statistical estimates. Also, over the eight observation years, 83 % of MS have provided data for four or more years.
- There is a stable blood supply, as no overall trends are observed in the proportion of first-time donors, in the number of donors and donations per inhabitant or in the use of red blood cell units per inhabitant. However, there seems to be clear upward trends in blood donations and blood use in Lithuania and Poland and a clear downward trend in blood use in Finland, the Netherlands and the United Kingdom.
- The downward trend in WB use that was reported in the 2001-2005 trend report is confirmed and strengthened by the additional three years of observation. Several countries that reported around 5 % or more of autologous blood transfusions in 2001 (Bulgaria, Croatia, Georgia, Greece, Moldova, Slovak Republic, Switzerland) have systematically and substantially reduced this number over the reporting period. The estimated overall reduction in WB use is 20 % per year (p -value of 0.01 %).
- A similar pattern is observed for the proportion of autologous blood transfusions. Several countries that reported approximately 5 % autologous blood transfusions in 2001 (France, Germany, Italy, Luxembourg, Switzerland) have systematically and substantially reduced this number over the reporting period. The estimated overall reduction in autologous blood use is 17 % per year (p -value of 0.01 %).
- There is a very small but clear increase in platelet use (0.13 % per year, p -value 0.01 %). There is also a small increase in the percentage of platelets obtained by apheresis (0.4 % per year, p -value 4 %).
- There is no overall trend in FFP units used per inhabitant, nor is there an overall trend in the ratio of FFP and RBC usage, in the amount of plasmapheresis plasma obtained per inhabitant or in the amount of plasma obtained for fractionation per inhabitant. Nevertheless, clear upward and downward trends are present in individual MS.
- There is an upward trend in the percentage of leucocyte-depleted RBCs (p -value 0.01 %): 21 % of all MS that reported on the proportion of leucocyte-depleted RBC for four or more years show an increase, with a p -value of 5 % or less. Some individual MS show a slight negative trend.
- There is an overall increase in the percentage of irradiation of RBCs (p -value of 0.01 %, an increase of 0.34 % per year). Some MS presented a slight negative trend for this parameter.
- Among repeat donors, there is a small but significant increase in the HIV incidence rate (p -value of 2 %, a rise of 2 % per year) and significant negative trends in HBV (p -value of 0.01 %, a decrease of 8 % per year) and HCV (p -value of 0.1 %, a decrease of 8 % per year) incidence rates. For repeat donor incidences, four MS showed slight trends (p -values of 10 % or less).
- Among first-time donors, there is no overall trend in the prevalence of HIV, but highly significant negative overall trends in the incidences of HBV (p -value of 0.01 %, a decrease of 3 % per year) and HCV (p -value of 0.01 %, a decrease of 8 % per year). For first-time donor HIV, HBV or HCV prevalence, eight or more MS presented slight trends (p -value of 10 % or less). These are equally distributed for HIV (4 upward and 4 downward trends), but are clearly skewed for HBV (2 upward and 9 downward) and HCV (0 upward and 9 downward). The downward trends of HIV and HCV incidences in the Czech Republic and that of HCV in Denmark are highly significant (p -values of less than 1 %).

- Three or more slight downward trends are observed for HIV, HBV or HCV infection rates in the Czech Republic, Poland, France and Germany. Two slightly negative trends for these diseases were observed in Belgium, Denmark, Estonia, Lithuania, Spain and Sweden. Two slightly positive trends were observed HIV and HBV prevalence in Ireland. However, it is worthy of note that the prevalence of HIV and HBV in Ireland are still amongst the lowest reported.
- There are no changes in the proportion of MS that test all donations with various serological tests. However, since 2005, a substantial increase is observed in the implementation of HIV- and HBV-NAT for testing (8 % and 9 %, respectively) of all donations.
- No changes are observed in the proportion of MS that have a national council or expert committee, that have implemented ID and labelling of donation numbers or component codes and whose donations are covered by standards.
- There is an overall increase of 2.3 % per year in the proportion of MS that have established a quality assurance system.

The use of data over a time span of eight years allows a more robust assessment of trends in this report than in the previous trend report (data from 2001 to 2005). Despite the fact that some of the trends previously identified for individual MS have now changed, most of the overall trends (or the lack thereof) that were observed in the previous report have been sustained and confirmed by the additional data collected.

Nevertheless, the following changes in overall trends in comparison to the previous report were found:

- The small increase in the use of red blood cell units of 0.4 per 1000 inhabitants is no longer statistically significant. It was clear, also from the previous report, that there are both positive and negative trends in RBC use in individual MS. Even though the evidence for these individual trends has strengthened their effects are now balanced out overall.
- The downward trends in WB use and autologous blood transfusions have remained, but their magnitude of change has changed slightly.
- A small increase in platelet use has now been identified and the increase in the percentage of platelets obtained by apheresis is slightly lower than previously reported.
- The previously reported small increase in FFP units used is no longer apparent.
- This report confirmed the decreases in repeat donor HBV incidence and first-time donor HCV prevalence described in the previous trend report. In addition to these trends, the current report identified an increase in the overall HIV incidence rate and decreases in the overall HCV incidence rate and overall HBV prevalence.

Limitations and future plans

Some observations obtained from the annual surveys are likely to be erroneous. However, the data utilised have been previously reported and, as such, have been approved. By putting these data in a historical perspective, the errors become apparent. A constant, consistent and annually repeated baseline of reporting MS is a prerequisite for producing robust statistical estimates.

With the new web-based survey, which has been used as of 2009 (reporting year 2007), it is anticipated that compliance and quality of data will improve further. Also, processing of the data will be less error prone and it is expected that results may be reported with a smaller lag time. Processing these data will undoubtedly result in a much more pronounced view on trends in blood transfusion practices in Europe. It has been decided to pursue annual data collection and to produce an update of the trend analysis report every three years.

References

- Council Recommendation 98/463/EC on the suitability of blood and plasma donors and the screening of donated blood in the European Community; Council of the European Union, June 1998.
- Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003, setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components and amending Directive 2001/83/EC; The European Parliament and the Council of the European Union, January 2003.
- Guide to the preparation, use and quality assurance of blood components, 11th edition, ISBN 978-92-871-5667-9; Recommendation No. R (85) 15; Council of Europe Publishing, 2005.
- Guideline on epidemiological data on blood transmissible infections for inclusion in the guideline on the scientific data requirements for a plasma master file, EMEA/CPMP/BWP/3794/03; Committee for medicinal products for human use, January 2005.
- Helsel D.R., Frans L.M.; Regional Kendall test for trend; *Environmental Science & Technology* 40 (13), 4066-4073, 2006.
- Hirsch R.M., Alexander R.B., Smith R.A.; Selection of methods for the detection and estimation of trends in water quality; *Water Resources Research* 27, 803-813, 1991.
- Mann H.B.; Nonparametric test against trend; *Econometrica* 13, 245-259, 1945.
- Onoz B., Bayazith M.; Power of statistical tests for trend detection; *Turkish J. Eng. Env. Sci.* 27, 247-251, 2003.
- Questionnaire on the collection, testing and use of blood and blood products in Europe; Council of Europe Publishing, SP-HM (2002) 12, 22 May 2002.
- Rejman A.; The collection and use of human blood and plasma in the non- European Union Council of Europe Member States in 1997; Council of Europe Publishing, Strasbourg, 2000.
- Sen P.K.; Estimates of the regression coefficient based on Kendall's tau; *Journal of the American Statistical Association*, 63, 1379-1389, 1968.
- The collection, testing and use of blood and blood components in Europe in 2006; Directorate for the Quality of Medicines & HealthCare of the Council of Europe (EDQM), Strasbourg, CD-P-TS, December 2009.
- The Collection, Testing and Use of Blood and Blood Components in Europe - 2007 Report; Directorate for the Quality of Medicines & HealthCare of the Council of Europe (EDQM), Strasbourg, CD-P-TS, May 2011.
- The Collection, Testing and Use of Blood and Blood Components in Europe - 2008 Report; Directorate for the Quality of Medicines & HealthCare of the Council of Europe (EDQM), Strasbourg, CD-P-TS, May 2011.
- Trends and Observations on the Collection, Testing and Use of Blood and Blood Components in Europe - 2001-2005 Report; Directorate for the Quality of Medicines & HealthCare of the Council of Europe (EDQM), Strasbourg, CD-P-TS, 2007 http://www.edqm.eu/medias/fichiers/Trends_and_Observations_on_the_Collection_Testing_.pdf.

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