Trends in tuberculosis incidence and their determinants in 134 countries

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Objective To determine whether differences in national trends in tuberculosis incidence are attributable to the variable success of control programmes or to biological, social and economic factors.
Methods We used trends in case notifications as a measure of trends in incidence in 134 countries, from 1997 to 2006, and used regression analysis to explore the associations between these trends and 32 measures covering various aspects of development (1), the economy (6), the population (3), behavioural and biological risk factors (9), health services (6) and tuberculosis (TB) control (7).
Findings The TB incidence rate changed annually within a range of ±10% over the study period in the 134 countries examined, and its average value declined in 93 countries. The rate was declining more quickly in countries that had a higher human development index, lower child mortality and access to improved sanitation. General development measures were also dominant explanatory variables within regions, though correlation with TB incidence trends varied geographically. The TB incidence rate was falling more quickly in countries with greater health expenditure (situated in central and eastern Europe and the eastern Mediterranean), high-income countries with lower immigration, and countries with lower child mortality and HIV infection rates (located in Latin America and the Caribbean). The intensity of TB control varied widely, and a possible causal link with TB incidence was found only in Latin America and the Caribbean, where the rate of detection of smear-positive cases showed a negative correlation with national incidence trends.
Conclusion Although TB control programmes have averted millions of deaths, their effects on transmission and incidence rates are not yet widely detectable.

Une traduction en français de ce résumé figure à la fin de l'article. *Al final del artículo se facilita una traducción al español.* الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

The international targets for tuberculosis control, framed within the United Nations' Millennium Development Goals,[1] are to ensure that by 2015 the global TB incidence rate is declining and the global TB prevalence and death rates for 1990 are halved.[2] These targets are to be achieved by implementing WHO's Stop TB Strategy (founded on the core DOTS strategy), central to which is the prompt diagnosis of patients with active disease followed by supervised, short-course, combination chemotherapy.[3] The Stop TB Strategy sets the standards for case management today, as it is widely recognized that prompt treatment with the right drug regimens can cure almost all TB patients and save lives. However, combination chemotherapy has been widely available for at least 40 years and has thus affected TB transmission, incidence and mortality rates in industrialized countries since before the DOTS era.[4]

According to data submitted to WHO, in 2006 the 2.5 million new smear-positive cases under DOTS represented 61% of all new smear-positive cases in the world that year, and treatment success was nearly 85% in the 2005 DOTS cohort of 2.3 million patients. The estimated global incidence rate, which peaked around 2003, fell slowly (by about 0.6%) between 2005 and 2006.[5] In 2006, the incidence rate stabilized in the European Region and continued to decline slowly in the other five WHO regions of the world. WHO estimates that the prevalence and death rates have been falling longer and faster than the incidence rate.

Where TB incidence is falling, we expect this to be attributable, at least in part, to DOTS and to programmes of case management that preceded DOTS. However, the effect of these treatment programmes on transmission and incidence is still unclear because other factors can reduce transmission (e.g. drier, well-ventilated homes occupied by fewer people) or lower the risk of developing active disease following infection (e.g. improved nutrition[6] and waning HIV epidemics)[7]. A major challenge in TB epidemiology is to distinguish the effect of these factors from the direct effect of efforts to diagnose and cure patients with active TB.[8]

To investigate the effect of case management programmes on TB incidence, we carried out a comparative analysis of factors that could be key direct or indirect determinants of national TB incidence trends over 1997–2006. The variables studied were readily available measures of specific aspects of the economy, the population, behavioural, biological and social risk factors, health services and the intensity of TB control. We conjectured that if TB diagnosis and treatment (including DOTS programmes) are having a greater effect in countries where they have been most widely implemented, then conventional indicators of programme performance, including case detection and treatment success rates, should emerge as dominant explanatory variables in an ecologic or correlation analysis. Conversely, if diagnosis and treatment are not yet the principal drivers of TB epidemics, then other factors should be more strongly associated with inter-country variation in TB incidence trends, both within regions and globally.

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Methods

Cases of TB (in all its forms) reported annually to WHO were used to calculate trends in incidence rate, the latter expressed as the number of cases notified annually in a given country per 100 000 population. The single outcome variable used in this analysis was thus the annual rate of change in the TB incidence rate. Among 211 countries and territories that routinely provide data to WHO, we included only those whose trend in case notifications was judged to equal or closely reflect the underlying trend in true incidence. Countries were excluded if: (i) three or more years of data were missing from the 10-year series (for 22 countries, one or two missing values from the series were inserted by linear interpolation); (ii) notifications were highly variable between years (standard error/mean > 1/3, usually an indication of unreliable notification systems); or (iii) an upward trend was likely to have been affected by efforts to increase case detection or to notify a greater proportion of detected cases. Improved case finding often leads to steep rises in annual case notifications – rises greater than 20% on average – that cannot be due to real increases in TB incidence (e.g. as documented for the Democratic People's Republic of Korea, Indonesia and Myanmar), though in some countries, such as India, such rises are largely restricted to sputum smear-positive cases.[5] For China alone we calculated the trend in prevalence, rather than incidence, from a series of national population surveys, a more reliable source of information than case notifications.[9] The decline in prevalence was expected to be a few percentage points faster than the decline in incidence. For countries that satisfied the inclusion criteria, the exponential trend in incidence rate for the period 1997–2006 was obtained by least squares regression.

Countries were divided into six groups derived from the six WHO regions, as follows: sub-Saharan Africa (trend estimates given for 28 of 49 countries), central and eastern Europe (25 of 28), the eastern Mediterranean (12 of 19), high-income countries (26 of 30), Latin America and the Caribbean (25 of 42), and the combined regions of south-east Asia and the western Pacific (18 of 43).[5] Appendix A in online supporting material (available at: www.who.int/tb/publications/en/) gives, for each country, data and statistics defining the reasons for inclusion or exclusion, together with the estimated trends.

We investigated the link between incidence trends and 32 independent variables that described aspects of each country's economy, population, behavioural and biological risk factors for TB, health services, and intensity of TB control, though not all data were available for all countries (Table 1; Appendix B, available at: www.who.int/tb/publications/en/). For the entire world, and for each region separately, we first established the variables associated with incidence trends by unweighted, univariate linear correlation and regression carried out in Stata 9 (Centers for Disease Control and Prevention, Atlanta, GA, United States of America). As a step towards stabilizing the residual variation in regression analysis, we used logarithmic transformations of the data on health expenditure per capita (three variables) and child mortality (one variable), for which country averages differed by a factor of 10 or more. For data falling between 0 and 10 or 0 and 100 (23 variables), we used the arcsin square root transformation of the data expressed as a proportion. The transformations affect the details of the analysis, but untransformed variables yield the same general conclusions. Combining biological and statistical criteria, significance in univariate regression was defined as $r^2 \geq 0.20$ and $P < 0.05$ in 2-sided t tests (Appendix C, available at: www.who.int/tb/publications/en/).

The 32 selected variables are directly and indirectly related to each other, in ways that are not always predictable. Thus, health spending can be measured in terms of total expenditure, government expenditure and expenditure in relation to gross domestic product (GDP);[17] these different measures are usually correlated. Tobacco smoking[19,20] and diabetes are among the known risk factors for TB,[21] but they are more prevalent in wealthier countries with lower TB incidence. It was therefore unclear whether they would be positively or negatively associated with trends in incidence.

To identify the dominant factors among interrelated variables, those that were statistically significant in univariate regression were included in a multivariate linear regression model in which observations on the outcome variable (annual rate of change in TB incidence rate) were weighted by 1/variance. Independent variables that had low explanatory power in combination with others were removed one by one – the least significant at each step – to generate a minimal model containing only variables that were significant at $P < 0.05$ in 2-sided t-tests. The significance of the multivariate minimal model is given in terms of F statistics. Appendix A, Appendix B and Appendix C in the online supporting material give a full list of countries, country groups, data for trend calculations and explanatory variables, plus statistics for the fitted models.

Results

Incidence trends for the period 1997–2006 could be obtained for 64% (134) of the 211 countries and territories reporting to WHO, which represented 73% of the estimated global TB incidence in 2006; 77 countries did not satisfy the inclusion criteria (Appendix A). Among the 134 countries included in the study were 13 of the 22 countries defined by WHO as having a high burden of TB.[5] The 9 high-burden countries excluded a priori were Afghanistan, Bangladesh, Cambodia, Indonesia, Myanmar, Nigeria, Pakistan, Thailand and Uganda.

The incidence rate changed annually within a range of ±10% in the 134 countries, and its average value declined in 93 countries. The average rate of change was −1.9% per year and the median rate was −2.2% per year, with the slightly skewed distribution shown in Fig. 1. On average, the decline was fastest in high-income countries (average: −3.9% per year; 95% confidence interval, CI: −10.3 to 2.5; n = 26) and the average trend was upwards in sub-Saharan Africa (average: 1.8% per year; 95% CI: −6.1 to 9.7; n = 28; Fig. 2). Among 35 countries where the TB incidence rate was declining at more than 5% per year, 10 were high-income, 8 were in central and eastern Europe, 7 were in Latin America and the Caribbean, and 10 in five of the six groups were islands. When countries within regions were compared, the annual variation in incidence trend was greatest among countries in central and eastern Europe (95% CI: ±11.2%; n = 25; Fig. 2).

Table 1. **Variables that can potentially explain inter-country variation in the annual rate of change in TB incidence in 134 countries, 1997–2006**

Variable	No. of countries with data	Value range	Reference
Composite development			
Human development index (0–10, 0 = least developed, 2005)[a]	130	0.3–0.7	10
Economy			
Corruption perception index (0–10, 0 = most corrupt, 2007)	128	1.5–5.4	11
GDP per capita (PPP$ 2004)	129	635–75 863	12
Annual change in GDP 1996–2005 (% per year)	130	−3 to 20	12
People with income < 1 PPP$ per day, up to 2004 (%)	81	0–71	12
People with income < 2 PPP$ per day, up to 2004 (%)	80	0–92	12
Income inequality (Gini index, 0–100, up to 2004)	103	25–74	12
Population			
People aged ≥ 15 years (2005) (%)	134	51–86	12
People living in urban areas (2005) (%)	134	10–100	13
TB patients, foreign-born (2005) (%)	20	10–78	14
Behavioural and biological risk factors			
People 20–79 years old with diabetes (2007) (%)	115	1–20	12
People undernourished (up to 2004) (%)	111	2–75	12
Adult male smokers (2000–2005) (%)	78	6–68	15
Adult female smokers (2000–2005) (%)	77	0–37	15
HIV+ adults (2005) (%)	113	0–33	12
HIV+ adult TB patients (2005) (%)	113	0–75	5
People with access to improved water source (2004) (%)	82	4–100	12
People with access to improved sanitation (2004) (%)	90	2–100	12
People using solid fuels (up to 2003) (%)	126	2–98	16
Health services			
Total health expenditure per capita (PPP$, 2004)	131	15–6096	17
Government health expenditure per capita (PPP$, 2004)	131	3–4679	17
Total health expenditure as a % of GDP	131	0–17	17
Health workers per 1000 population (up to 2005)	89	0–26	12
Child mortality (deaths before 5th birthday per 1000 live births, 2005)	131	0–282	18
Annual change in child mortality 1990–2005 (% per year)	128	−9.2 to 5.0	Derived from[18]
TB control programmes			
Expenditure on TB control per capita (PPP$, 2004)	51	12–6636	5
Expenditure on TB control per TB patient (PPP$, 2004)	51	14–40 005	5
Treatment success in DOTS cohorts (proportion smear+ cases cured plus completed, 2005)	113	0.3–1.0	5
New TB cases detected (2006) (%)	131	5–195[b]	5
New smear+ TB cases detected (2006) (%)	117	4–149	5
New TB cases treated successfully (product of 28 × 29) (%)	110	5–135	Derived from[5]
New smear+ TB cases treated successfully (product of 28 × 30) (%)	112	0–139	Derived from[5]

GDP, gross domestic product; PPP$, purchasing power parity dollar; TB, tuberculosis.

[a] Sources for this analysis give full definitions of indicators and state the methods by which data were collected. Compilations such as *World development indicators*[12] give the original sources of data.

[b] Most case detection values range from 0 to 100%; the reasons that this index and its derivatives can exceed 100% are explained elsewhere.[5]

For all 134 countries, 3 of the 32 independent variables were correlated with incidence trends at $r^2 \geq 0.2$ and $P < 0.05$ (Table 2). TB incidence was declining more quickly in countries that had a higher human development index, lower child mortality and access to improved sanitation (Fig. 3, Fig. 4 and Fig. 5). Of the three key correlates, only child mortality was retained in the minimal multivariate model (combined model: $r^2 = 0.32$; $P < 0.0001$; Appendix C). Measures of how intensely TB control programmes were implemented varied widely among countries (e.g. the inter-quartile range for detection of smear-positive cases was 42–82%, and for treatment success among such cases, 73–88%; see also the ranges in Table 1); however, none of the seven direct measures of the intensity of TB control was associated with TB trends worldwide.

Because statistical significance depends on the magnitude of a biological effect and sample size, significant effects are harder to detect in regions with fewer data (Table 1, Fig. 3, Fig. 4 and

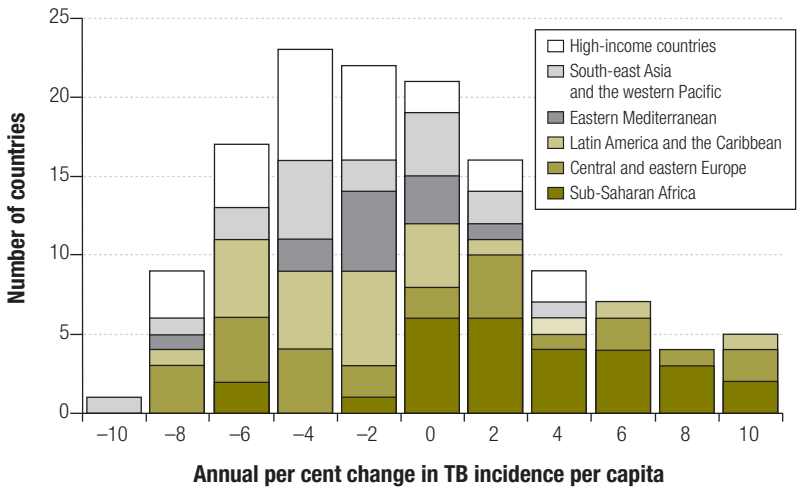
Fig. 5). Of 192 possible associations (32 variables across 6 country groups), 2 were significant with the criteria $r^2 \geq 0.2$ and $P < 0.05$. In Africa, the number of health workers and the expenditure on TB control per capita were significant correlates of TB incidence trends, but the association was positive: the more workers and the higher the expenditure, the higher the TB incidence (online supporting material, available at: www.who.int/tb/publications/en/).This is probably explained by the positive association between both of these explanatory variables and the prevalence of HIV infection ($t > 3.5$; $P < 0.002$). Central and eastern Europe showed the strongest set of associations with TB incidence trends (Table 2). Of the 12 variables that showed significance in the univariate analysis, per capita health expenditure and improved sanitation were dominant in the multivariate regression ($r^2 = 0.89$; $P < 0.0001$).

Among high-income countries, TB was declining more quickly in countries with fewer immigrants (measured by the proportion of TB patients who were foreign born), and with a higher (not lower) prevalence of diabetes, and both variables were retained in the multivariate model ($r^2 = 0.79$; $P < 0.0001$). TB trends in the eastern Mediterranean were associated with two related economic variables: GDP and health expenditure in relation to GDP. However, only the latter was retained in the minimal multivariate model.

In Latin America and the Caribbean, univariate analysis showed a correlation between TB trends and nine variables, five of them different from the ones that yielded significance in central and eastern Europe. Another set of five variables was retained in the minimal multivariate model ($r^2 = 0.96$; $P = 0.04$); one of them – the detection of smear-positive cases – was a direct measure of the intensity of TB control (Table 2).

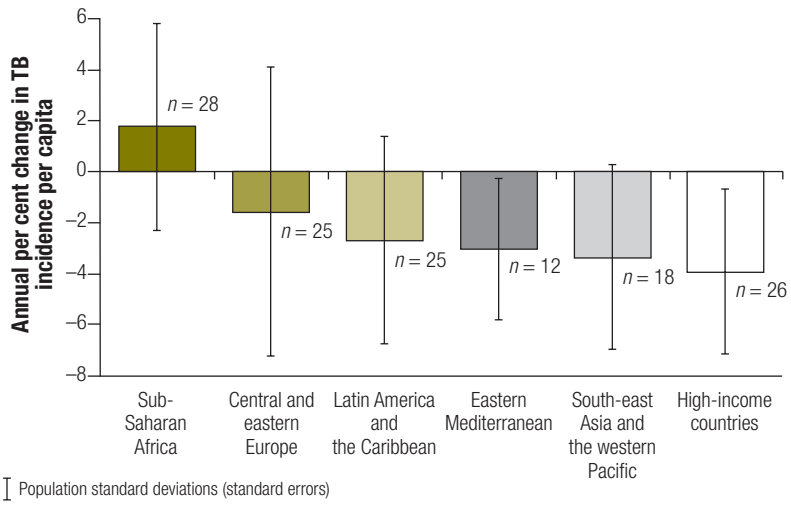
In south-east Asia and the western Pacific, TB was declining faster in countries with higher child mortality (online supporting material, available at: www.who.int/tb/publications/en/), an association that was not in the expected direction, which was the opposite of that observed in central and eastern Europe, Latin America and the Caribbean, and the world as a whole (Table 2). The association disappeared with the exclusion of one unusual country in the region: the Republic of Korea has low child mortality and low TB incidence, with a flat trend resembling that of some high-income countries.

Fig. 1. **Frequency distribution of trends in TB incidence rate in six groups of countries (n = 134), 1997–2006**[a]



TB, tuberculosis.
[a] The countries in each group are listed in Appendix B.

Fig. 2. **Trends in average TB incidence rate across six groups of countries (n = 134), 1997–2006**[a]



TB, tuberculosis.
[a] The countries in each group are listed in Appendix B. The figure outside each bar is the number of countries included in the calculation for each group.

Discussion

The striking observation in this study was that more than a decade after DOTS was first implemented, with varying levels of national coverage, only one direct measure of TB control intensity (detection of smear-positive cases) in a single region (Latin America and the Caribbean) was associated with a downward trend in TB incidence. None of the seven direct measures of TB programme performance was associated with TB trends globally, although the magnitude of these control variables varied widely among countries. Math-

Table 2. **Variables correlated with the annual change in TB incidence rate in 134 countries over 1997–2006, by country group**[a,b]

Variable	Sub-Saharan Africa	Central and eastern Europe	High-income countries	Eastern Mediterranean	Latin America and the Caribbean	South-east Asia and the western Pacific	All country groups
Composite development							
Human development index		−0.60					−0.20
Economy							
Corruption perception index		−0.52					
GDP per capita		−0.61		+0.34	−0.21[c]		
Annual change in GDP							
People with income < 1 PPP$							
People with income < 2 PPP$		+0.43					
Income inequality							
Population							
Population aged ≥ 15 years							
Urban population							
Percentage of foreign-born TB patients			+0.47[c]				
Behavioural and biological risk factors							
Diabetes in people aged 20–79 years			−0.47[c]				
Undernourished people		+0.36			+0.31		
Adult male smokers							
Adult female smokers		−0.45					
HIV prevalence					+0.41		
HIV prevalence in TB patients					+0.26		
People with improved water source					−0.41[c]		
People with improved sanitation		−0.40[c]			−0.43[c]		−0.26
People using solid fuels		+0.30					
Health services							
Total health expenditure per capita		−0.66[c]					
Government health expenditure per capita		−0.63					
Total health expenditure as % of GDP		−0.23		−0.53[c]			
Health workers per 1000 population	+0.33						
Under-5 mortality					+0.36[c]		
Annual change in under-5 mortality		+0.39			+0.35	−0.29[c]	+0.25[c]
TB control programmes							
Expenditure on TB control per capita[d]	+0.49[c]						
Expenditure per TB control per patient[d]							
New TB cases detected[d]							
New smear+ TB cases detected[d]					−0.32[c]		
Treatment success in DOTS cohorts[d]							
New TB cases successfully treated[d]							
New smear+ TB cases successfully treated[d]							

GDP, gross domestic product; PPP$, purchasing power parity dollar; TB, tuberculosis.

[a] The countries in each group are listed in Appendix B (available at: www.who.int/tb/publications/en/).

[b] The numbers are values of r^2 for associations that were significant in univariate linear regression ($r^2 > 0.20$; $P < 0.05$). Cells are blank where there was no significant association.

[c] Variables that yielded significance and were retained in a minimal multivariate model.

[d] This variable is a measure of the intensity of TB control.

ematical modelling suggests that such wide variation should be accompanied by a substantial and measureable difference in incidence (e.g. an increase in the detection rate of smear-positive cases from 42% to 82% should correlate with a decrease in incidence).[22] Thus, we conclude that TB diagnosis and treatment programmes, pre- or post-DOTS, have not yet become the principal determinants of TB transmission and incidence trends, though they may do so in the future. Recent trends in TB incidence are, by contrast, more strongly associated with biological, social and economic determinants that differ among countries and regions. The regional differences explain why only three general measures of development were dominant worldwide: the human development index, child mortality and access to improved sanitation.

TB incidence in most countries appears to be declining slowly. Few

countries have enjoyed the rates of decline seen in Europe at the start of the chemotherapy era (> 10% per year),[4] which are expected to result from DOTS programmes.[22] The countries that come closest to these expectations, with a decline > 5% per year, are mostly those that are islands, have a high average income, or are located in central Europe or Latin America and the Caribbean. None are among the 13 WHO high-burden countries investigated here,[5] which are mainly in sub-Saharan Africa and in south-east Asia and the western Pacific.

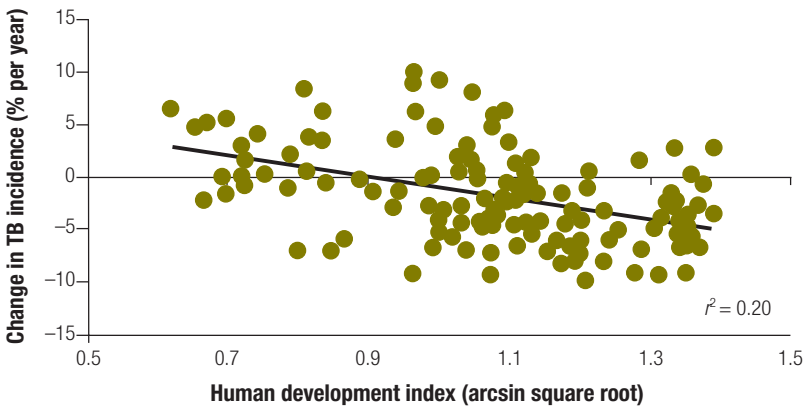
The proposition that TB diagnosis and treatment programmes have not yet become the principal drivers of TB transmission and incidence will remain a hypothesis until four key assumptions can be tested. The first is that trends in case notifications reflect underlying trends in incidence. Some countries clearly had to be excluded from the analysis because their rising trends in case notification (for all forms of TB) obviously reflect improved case finding under DOTS rather than the underlying trend in incidence. Exclusions of this kind eliminate countries where improved case finding is associated with an increase, rather than the expected decrease, in reported cases. For the countries that were included in this analysis, the effect of treatment might not be discernible if a slow decline in TB incidence is masked by a moderate improvement in case detection.

The second assumption, essential in comparative analysis, is that there is measurable and meaningful variation among countries in incidence trends and their determinants. If TB control programmes were uniformly effective, their effectiveness would not be detectable in this analysis, but this seems unlikely because TB incidence is declining slowly and unevenly and because measures of the intensity of TB programme implementation vary greatly among countries. Moreover, our estimates of incidence trends are correlated with numerous biological, social and economic variables, which suggests that these trend estimates do reflect changes in incidence.

A greater potential problem is that the standard direct measures of TB programme performance – mainly case detection and treatment success – are not the best measures of factors that govern disease transmission and changes in incidence. The difficulties of estimating the total number of TB cases that arise each year – the denominator of the case detection rate as defined by WHO – have frequently been described.[8,23] In addition, a high case detection rate does not necessarily imply rapid diagnosis; in principle, a large fraction of cases could be detected after long delays, once most infectious contacts in a community have already been made. In cohorts, outcomes are never known for patients who default, are transferred to other treatment centres without follow-up, or are never evaluated. This limits the usefulness of treatment success as a measure that should be inversely associated with infectiousness and transmission. Of 2.3 million patients in the 2005 global DOTS cohort, fewer than 10% had unknown treatment outcomes. However, treatment outcomes were not known for an estimated 1.5 million smear-positive, non-DOTS patients in 2005.[5]

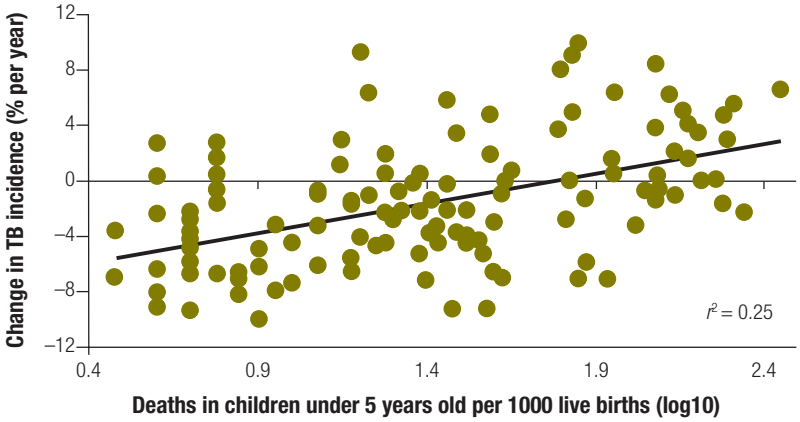
Third, transmission and the risk of infection may have been greatly reduced by more than a decade of DOTS implementation, but perhaps we have not yet seen the latter's full effect on incidence. In this study, incidence trends were measured as 10-year averages (1997–2006). Some countries did not have wide DOTS coverage for at least the first half of this period and most were treating patients with

Fig. 3. **Human development: a statistically significant correlate of trends in TB incidence rate across six groups of countries over 1997–2006, as judged by univariate linear regression (fitted line)[a]**



TB, tuberculosis.
[a] Mortality in children under 5 years of age is the single significant correlate in multivariate analysis (Table 2).

Fig. 4. **Child mortality: a statistically significant correlate of trends in TB incidence rate across six groups of countries over 1997–2006, as determined by univariate linear regression (fitted line)[a]**



TB, tuberculosis.
[a] Mortality in children under 5 years of age is the single significant correlate in multivariate analysis (Table 2).

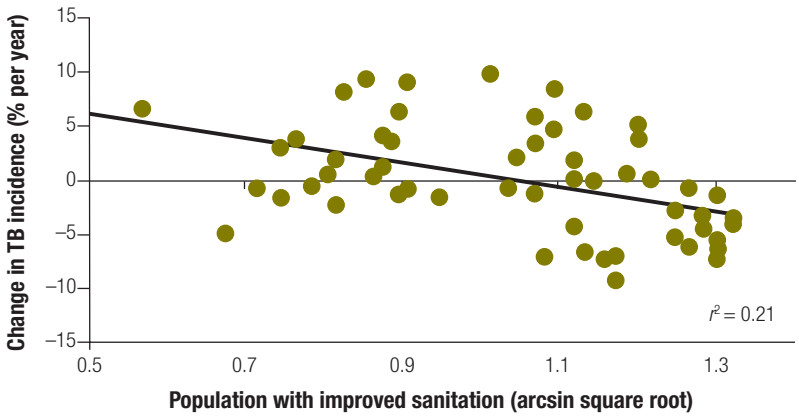
combination chemotherapy, though not necessarily with the recommended regimens. The alternative explanation is that treatment programmes do not find patients soon enough to substantially reduce transmission.

Fourth, the effect of treating patients to reduce transmission could be offset by factors that increase the risk of developing active TB following infection. Tobacco smoking and diabetes are risk factors for TB, but in this analysis both were associated with declining TB incidence. It may be that these factors reflect social patterns that are linked to health, health services and economic development in ways that override their importance as risk factors for TB. In multivariate analysis, tobacco smoking among women was replaced by factors more closely tied to the real determinants of epidemic TB trends, such as GDP per capita in central and eastern Europe.

Verifying whether trends in case notifications accurately measure trends in incidence calls for detailed studies of the completeness and accuracy of national TB surveillance systems, preferably coupled with surveys of infection, prevalence and mortality.[8] The Republic of Korea, which contributes to an unexpected, anomalous and doubtful link between TB and child mortality in Asia, is among the countries whose TB incidence trends need more careful evaluation. Determining whether case detection and treatment success accurately measure the effect of TB programme implementation on transmission calls for examining the entire process of diagnosis and treatment: the identification of suspected cases, delays in diagnosis, procedures for smear microscopy and culture, and treatment initiation and completion. What is required, in short, is a diverse set of studies following those already done, for example, in China, Italy, Peru, South Africa, Spain and Viet Nam.[9,24–28] Only with detailed investigations in countries will it be possible to distinguish the effect of TB control programmes from other factors affecting transmission and the progression from infection to active TB.

There are at least four further restrictions on the interpretation of these results. First, the findings of this study do not exclude the possibility that DOTS programmes are relatively weak determinants of TB trends in many countries, with effects that are obscured by other, stronger biological, social and economic factors. Second, this analysis refers to trends in incidence; it says nothing about the number of patients cured or of deaths averted by combination chemotherapy.[29,30] Third, we cannot conclude that TB treatment has had no major effect on TB incidence in any country; in fact, national studies (e.g. China and Peru)[9,24] and investigations in selected cities (e.g. Beijing and New York)[31,32] clearly show that investing in prompt diagnosis and curative treatment can substantially reduce TB incidence in low- and middle-income countries.[4,32] Fourth, as in all ecologic studies, strong correlation with TB trends does not necessarily reflect a causal link; conversely, the absence of a correlation does not exclude causality. Nevertheless, it is remarkable that among 25 countries in central and eastern Europe, single variables, such as health expenditure per capita, can explain two-thirds (66%) of the variation in TB trends.

Fig. 5. **Sanitation: a statistically significant correlate of trends in TB incidence rate across six groups of countries over 1997–2006, as determined by univariate linear regression (fitted line)[a]**



TB, tuberculosis.

[a] Mortality in children under 5 years of age is the single significant correlate in multivariate analysis (Table 2).

Conclusion

National TB control programmes play a vital role in curing TB patients and preventing deaths; the diagnosis and treatment of active TB have significantly reduced disease transmission and incidence in some countries. However, treatment programmes have not had a major, detectable effect on incidence on a large scale. The possible reasons are that: (i) patients are not diagnosed and treated soon enough to significantly reduce transmission; (ii) case detection, cure and TB incidence trends cannot be measured accurately; (iii) there has been insufficient time to see the effects of reduced transmission; and (iv) any effects on transmission are offset by a growing risk of developing TB following infection. This review presents, not definitive results, but a challenge: to show that early diagnosis and treatment can have a major effect on TB transmission and incidence worldwide, overriding or reinforcing other biological, social and economic determinants of TB epidemiology. ■

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Résumé

Tendances de l'incidence de la tuberculose et de ses déterminants dans 134 pays

Objectif Déterminer si les différences entre les tendances nationales de l'incidence de la tuberculose sont attribuables à la variabilité du succès des programmes de lutte contre cette maladie ou à des facteurs biologiques, sociaux et économiques.

Méthodes Nous avons utilisé les tendances de la notification des cas comme mesures des tendances de l'incidence de 1997 à 2006 dans 134 pays et utilisé l'analyse par régression pour étudier les associations entre ces tendances et 32 mesures couvrant divers aspects du développement (1), de l'économie (6), de la population (3), des facteurs de risque comportementaux et biologiques (9), des services sanitaires (6) et de la lutte contre la tuberculose (TB) (7).

Résultats Le taux d'incidence de la TB a varié annuellement dans une plage de ± 10 % sur la période d'étude dans les 134 pays étudiés et a baissé en valeur moyenne dans 93 pays. Ce taux diminue plus rapidement dans les pays présentant un indice de développement plus élevé, une mortalité infantile plus faible et un accès à un assainissement amélioré. Les mesures du développement général constituaient aussi des variables explicatives dominantes dans certaines régions, malgré les variations géographiques de la corrélation avec les tendances de l'incidence. Le taux d'incidence de la TB baissait plus rapidement dans les pays consacrant des dépenses plus importantes à la santé (situés en Europe centrale et orientale et en Méditerranée orientale), dans les pays à haut revenu et faible taux d'immigration et dans ceux présentant des taux de mortalité infantile et d'infection par le VIH plus bas (situés en Amérique latine et dans les Caraïbes). L'intensité de la lutte menée contre la TB était très variable et on n'a observé un lien causal potentiel avec l'incidence de la TB qu'en Amérique latine et aux Caraïbes, où le taux de détection des cas frottis positifs était corrélé négativement avec les tendances nationales de l'incidence.

Conclusion Bien que les programmes de lutte contre la tuberculose aient évité des millions de décès, leurs effets sur la transmission et les taux d'incidence de cette maladie ne sont pas encore largement observables.

Resumen

Tendencias de la incidencia de tuberculosis y sus determinantes en 134 países

Objetivo Averiguar si las diferencias en las tendencias nacionales de la incidencia de tuberculosis son atribuibles al distinto éxito de los programas de control o a factores biológicos, sociales y económicos.

Métodos Utilizamos las tendencias de las notificaciones de casos como medida de las tendencias de la incidencia en 134 países entre 1997 y 2006, aplicando análisis de regresión para estudiar la relación entre esas tendencias y 32 variables que abarcaban diversos aspectos del desarrollo (1), la economía (6), la población (3), los factores de riesgo comportamentales y biológicos (9), los servicios de salud (6), y el control de la tuberculosis (7).

Resultados La incidencia de tuberculosis varió anualmente dentro de un margen de ±10% durante el periodo estudiado en los 134 países examinados, y su valor medio disminuyó en 93 países. La tasa se redujo más rápidamente en los países que presentaban un mayor índice de desarrollo humano, una menor mortalidad en la niñez, y acceso a mejores sistemas de saneamiento. Los indicadores del desarrollo general fueron también las variables explicativas predominantes dentro de las regiones, si bien la correlación con la tendencia de la incidencia de tuberculosis dependía de la zona geográfica. La incidencia de la enfermedad caía más rápidamente en los países con mayor gasto sanitario (situados en este caso en Europa central y oriental y en el Mediterráneo Oriental), en los países de ingresos altos con poca inmigración y en los países con menores tasas de mortalidad en la niñez y de infección por el VIH (en América Latina y el Caribe). La intensidad del control de la tuberculosis era muy variable, y la existencia de un posible nexo causal con la incidencia de tuberculosis sólo se observó en América Latina y el Caribe, donde la tasa de detección de casos bacilíferos estaba negativamente correlacionada con las tendencias nacionales de la incidencia.

Conclusión Aunque los programas de control de la tuberculosis han evitado millones de defunciones, sus efectos en la transmisión y la incidencia de la enfermedad no son aún ampliamente detectables.

ملخص

الاتجاهات في وقوع السل ومحدداتها في 134 بلداً

الهدف: تحديد ما إذا كانت الاختلافات في الاتجاهات الوطنية في معدلات وقوع السل تعزي للنجاحات المختلفة التي حققتها برامج المكافحة أم إلى عوامل بيولوجية واجتماعية واقتصادية.

الطريقة: استخدم الباحثون الاتجاهات المتعلقة بالإخطارات عن الحالات واعتبروها مقاييس للاتجاهات في معدلات الوقوع في 134 بلداً، في المدة بين 1997 و2006. كما استخدموا تحليل التحوف لاستكشاف مدى الترابط بين هذه الاتجاهات وبين 32 من المقاييس التي تغطي مختلف جوانب التنمية (مقياس واحد) والاقتصاد (ستة مقاييس) والسكان (ثلاثة مقاييس)، وعوامل الخطورة البيولوجية والسلوكية (تسعة مقاييس)، والخدمات الصحية (ستة مقاييس) ومكافحة السل (سبعة مقاييس).

الموجودات: لقد تغير معدل وقوع السل تغيراً سنوياً بمعدل يتراوح بين (+10%) و(-10%) خلال فترة الدراسة في الـ 134 بلداً التي شملتها الدراسة، كما انخفضت قيمته الوسطية في 93 بلداً. وكان النقص أكثر سرعة في البلدان التي تتمتع بمنسب أعلى للتنمية البشرية، وبمعدل أقل لوفيات الأطفال، وبالحصول على إصحاح متحسن. وقد كانت المقاييس العامة للتنمية من المتغيرات التفسيرية الغالبة ضمن الأقاليم، وذلك رغم أن العلاقة المتبادلة مع اتجاهات معدلات وقوع السل كانت تختلف باختلاف المناطق الجغرافية. فقد كان معدل وقوع السل يهبط بشكل أسرع في البلدان التي يكون فيها الإنفاق الصحي أكبر (وهي البلدان التي تقع في أوروبا الوسطى والشرقية وشرق المتوسط)؛ والبلدان المرتفعة الدخل مع نسبة هجرة أقل من غيرها،

والبلدان التي تكون فيها معدلات وفيات الأطفال والعدوى بفيروس الإيدز أقل (وهي البلدان الواقعة في أمريكا اللاتينية والبحر الكاريبي). وتختلف شدة مكافحة السل اختلافاً واسعاً، وقد لوحظ ارتباط سببي محتمل مع معدل وقوع السل في بلدان أمريكا اللاتينية والبحر الكاريبي، حيث كانت معدلات كشف الحالات الإيجابية اللطاخة ذات تناسب عكسي مع الاتجاهات الوطنية للوقوع.

الاستنتاج: رغم أن برامج مكافحة السل قد أدت إلى تفادي ملايين الوفيات، فإن تأثيرها على معدلات السراية والوقوع لم يمكن كشفه بعد على نطاق واسع.

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Trends in tuberculosis incidence and their determinants in 134 countries

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Supporting material

This supporting material includes:

1. Regression statistics for the minimal multivariate models (Table S1).

2. Reported versus predicted changes in TB case notifications per capita and residuals of fitted models (Figure S1).

3. Variables that are associated with TB trends in 6 regions of the world, as judged by univariate linear regression (Figure S2).

4. Case notification rates, 1996–2006, and incidence trend estimates by country, with additional notes on the exclusion of countries from the analysis (Appendix A).

5. Dependent variable and 32 independent variables, by country (Appendix B).

6. Correlation statistics (univariate) for transformed data (Appendix C).

The data in Appendices A-C are available as Excel files from the authors.

Table S1. Specifications of minimal multivariate models for the world and 6 regions.

Region	Variables	Coefficients	Std error	P>t	df	F	r^2
World	U5 mortality	4.36	0.58	0.000	1, 119	57.25	0.32
Africa	TBexpenditure/cap	10.12	2.07	0.000	1, 11	23.91	0.68
C&E Europe	Per capita total expenditure on health $PPP 2004	-11.27	1.43	0.000	3, 14	36.24	0.89
	Improved sanitation %	-8.51	1.91	0.001			
High income	Diabetes	-128.67	26.37	0.000	2, 12	23.14	0.79
	Foreign born %	7.11	1.76	0.002			
E Mediterranean	Total exp health as % GDP	-71.02	23.41	0.013	1, 10	9.20	0.48
L America	GDP 2005	41.57	12.29	0.043	5,3	16.54	0.96
	Improved water supply %	53.93	16.21	0.045			
	Improved sanitation %	-36.22	7.06	0.014			
	U5 mortality	28.35	6.88	0.026			
	Detection new smear+ cases %/yr	-25.28	6.04	0.025			
SE Asia & W Pacific	U5 mortality	-5.63	1.47	0.002	1, 13	14.72	0.53

Fitted models are portrayed graphically in Figure S1 below.

Figure S1. Reported versus predicted changes in TB case notifications per capita (left) and residuals versus fitted values (right) for the world and 6 regions.

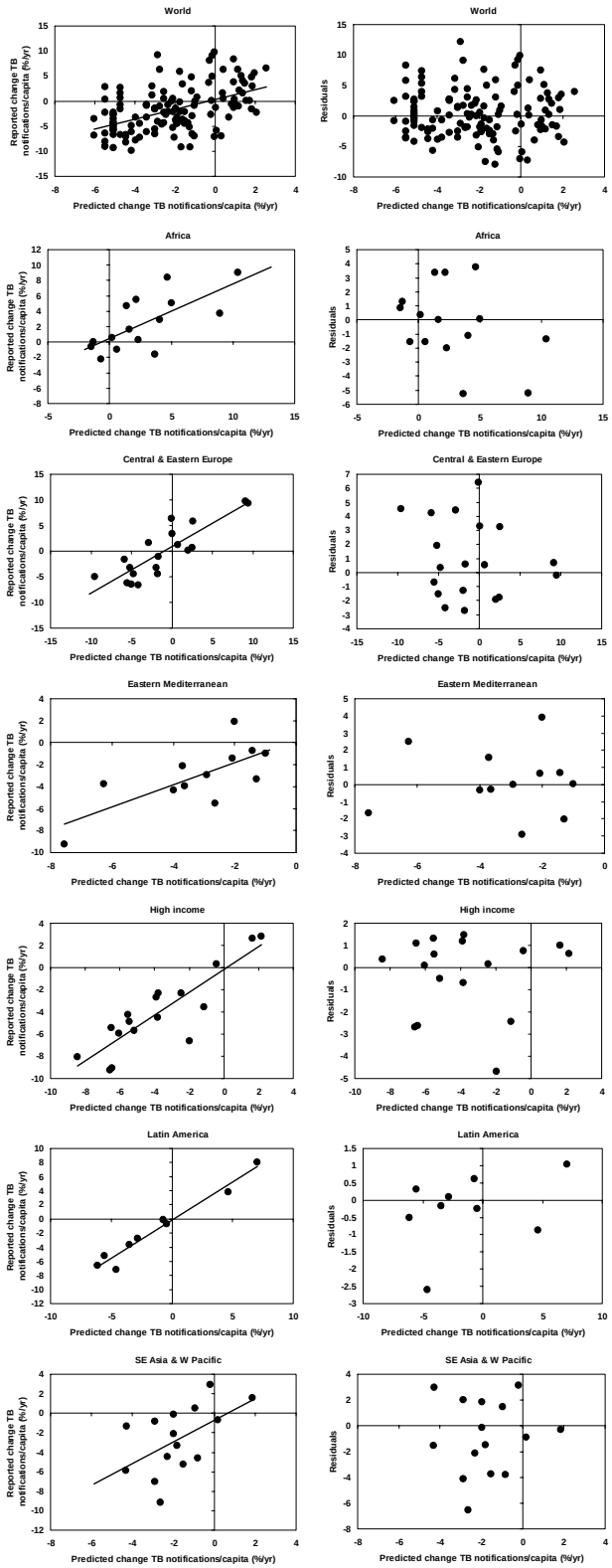
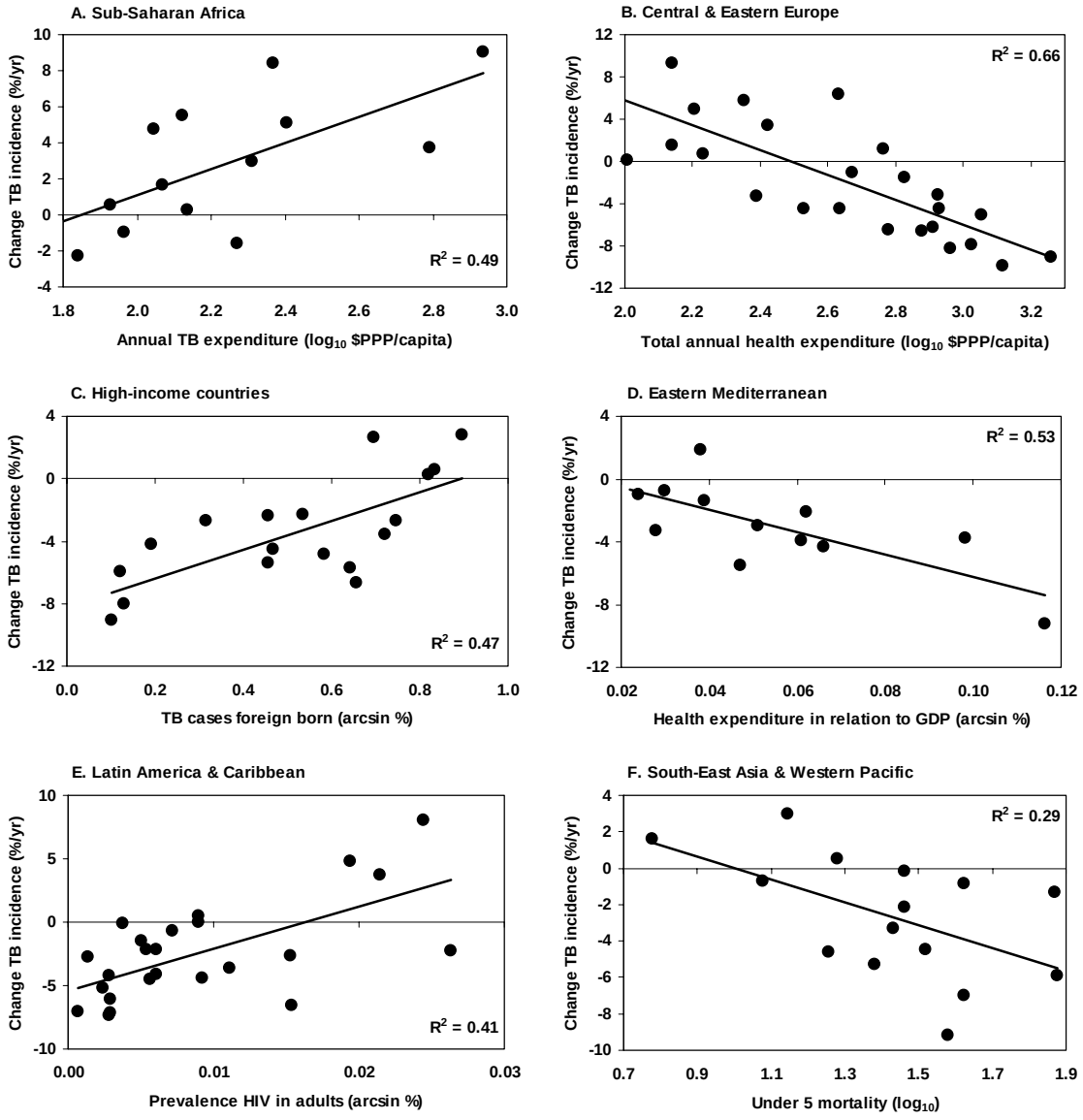


Figure S2. Variables that are associated with TB trends in 6 regions of the world, as judged by univariate linear regression (fitted lines).



Notes on Appendix A: exclusion of countries from association analyses

We excluded some countries from the analysis (indicated in column "Include=1" in Appendix A) because the trend in case notifications was judged to be different from the underlying trend in true incidence. As described in the main text, we used three criteria to exclude countries, where (a) three or more years of data were missing from the 10-year series (one or two missing values from the series for 22 countries were inserted by linear interpolation), (b) notifications were highly variable between years (standard error/mean > 1/3, usually an expression of unreliable notification systems), or (c) an upward trend is likely to have been affected by efforts to increase case detection, or to notify a higher proportion of detected cases.

While the exclusion of data generally weakens analysis of this kind we note, first of all that, among the countries that were excluded are those where an increase in case detection is associated with an increase in case notifications, the reverse of the expected effect (if notification trends represent incidence trends). So including such countries would obscure the expected effect, rather than enhance it.

Second, the outcome variable in this analysis is the number of notified TB cases (all clinical forms). Many national TB control programmes (NTPs) improved the detection of only smear-positive cases under DOTS (the emphasis of the strategy), not the total number of TB cases (our outcome variable), and only the smear-positive numbers have increased. India is an example (see Figure S3 below; where our outcome variable is the slope of the top line). So it is possible, in principle, to see improved case finding and its impact in the same country using different data.

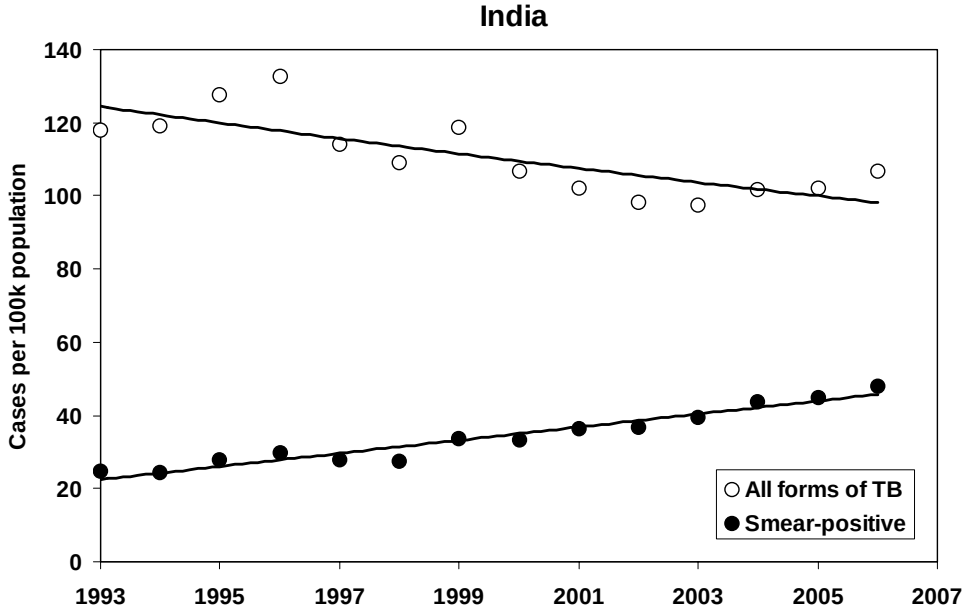


Figure S3. Trends in reported TB cases, smear-positive and all forms, in India 1993-2007.

We have also seen, in a few countries, associations between high rates of case detection or cure and falling incidence e.g. Morocco, Peru, Viet Nam (for some age groups) and several islands (Maldives, New Caledonia).

Further statistical analysis of the consequences of exclusion

To further explore the effects of including or excluding countries (besides Korea, mentioned in the text), we recalculated the univariate correlation coefficients for the full set of 172 countries (i.e. no exclusion) and compared the results obtained for 134 selected countries, as described in the main text.

For the larger set of countries there were 31 correlations that satisfied the criteria: $r^2>0.2$ with $p<0.05$, as compared with 32 for the selected countries. The two sets had 24 significant correlations in common, and the values of r were very similar (see Figure S4 below). Results were nearly identical for the TB control variables except that TB expenditure/capita was significant in the African region with n = 134, but not with n = 172. We infer that the exclusion process is unlikely to have affected our main conclusions.

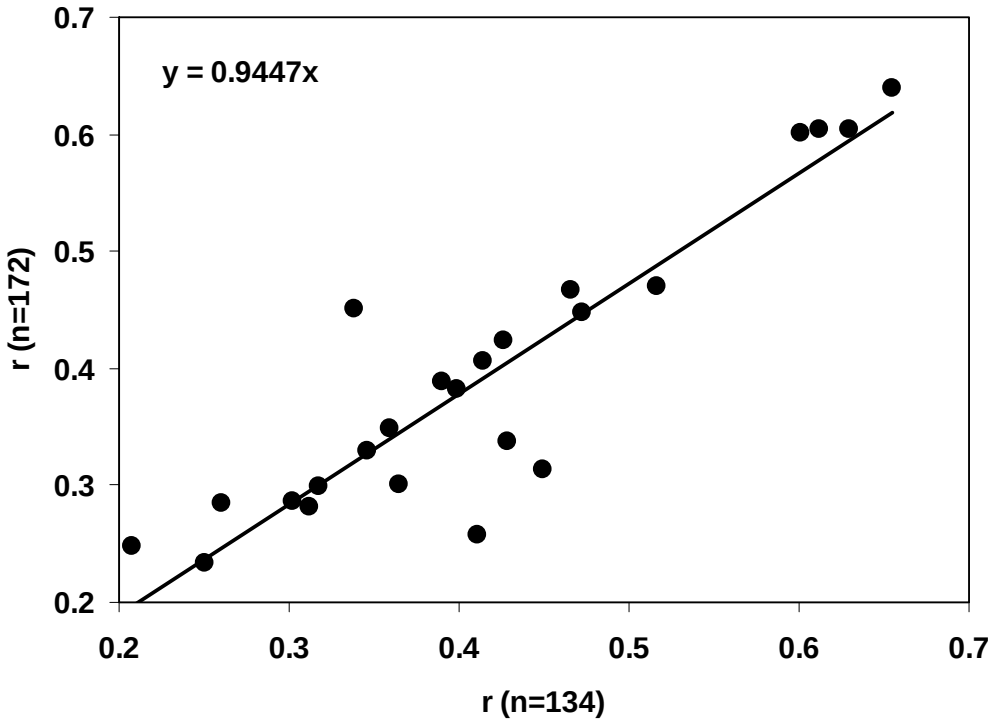


Figure S4. Univariate correlation coefficients for the full data set (n=172) versus a reduced data set (n=134).

Appendix A. Case notification rates, 1996–2006 (col D-N), and incidence trend estimates (col U)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Missing values or zero cases	Number yrs	Stdev/ mean %	Exact %chge/yr	Include = 1 (guide)	Exact %chge/yr (included)	Est inc new TB 2006	Est inc new TB 2006	Region
Afghanistan		7	16	16	34	47	62	60	76	87	98	1	10	63	27.8	0		42.5		4
Albania	24	21	22	24	20	18	19	17	17	16	15	0	10	15	-4.49	1	-4.49	0.6	0.6	2
Algeria	53	57	52	55	61	59	60	62	61	65	63	0	10	7	1.94	1	1.94	18.7	18.7	1
American Samoa	0	11	5	7	5	5	3	5	8	9		1				0		0.0		6
Andorra	26	29	12	15	18	15	7	14	10	14	16	0	10	39	-4.90	0		0.0		3
Angola	122	116	108	105	115	152	204	238	227	231	305	0	10	39	12.31	0		45.4		1
Anguilla		0				0	0	0	0			10				0		0.0		5
Antigua & Barbu	4	6	5	4	5	1	5	1		7		1				0		0.0		5
Argentina	38	35	34	33	32	31	31	28	28	25	24	0	10	12	-4.09	1	-4.09	15.2	15.2	5
Armenia	29	33	47	48	43	45	47	51	55	73	59	0	10	21	5.82	1	5.82	2.2	2.2	2
Australia		6	5	6	5	5	5	5	5	5	6	1	10	8	-0.70	1	-0.70	1.3	1.3	3
Austria	16	17	16	13	15	12	13	12	11	11	10	0	10	18	-5.42	1	-5.42	0.9	0.9	3
Azerbaijan	31	58	58	58	64	60	62	46	65	72	68	0	10	11	1.58	1	1.58	6.6	6.6	2
Bahamas	21	30	25	25	27		14	12	17			2				0		0.1		5
Bahrain	8	7	13	23	32	28	28	38	34	39	38	0	10	38	14.91	0		0.3		4
Bangladesh	49	48	54	58	54	54	57	60	65	80	93	0	10	22	5.85	1		350.6		6
Barbados	1	2	2	1	1	2	2		7		2	2				0		0.0		5
Belarus	55	59	61	73	68	55	52	52	55	54	53	0	10	12	-2.41	1		6.0		2
Belgium	13	12	12	11	13	13	12	10	11	10	10	0	10	10	-2.30	1	-2.30	1.4	1.4	3
Belize	45	47	53	44	43	54	53	38	31	37	30	0	10	21	-5.30	1		0.1		5
Benin	36	34	34	36	37	37	37	37	38	39	41	0	10	6	1.65	1	1.65	7.9	7.9	1
Bermuda	0	6	0	0	0	0	0		9		5	8	10			0		0.0		5
Bhutan	250	234	244	216	204	181	184	169	159	158	141	0	10	18	-5.87	1	-5.87	0.6	0.6	6
Bolivia	133	126	127	121	122	124	118	111	109	106	96	0	10	9	-2.74	1	-2.74	18.6	18.6	5
Bosnia & Herzeg	65	83	76	79	65	64	44	45	60	54	45	0	10	24	-6.50	1	-6.50	2.0	2.0	2
Botswana	414	445	476	508	537	549	575	549	558	548	453	0	4	9	-1.28	1	-1.28	10.2	10.2	1
Brazil	53	50	56	46	45	42	45	44	47	43	41	0	10	10	-2.13	1	-2.13	93.9	93.9	5
British Virgin Isla		16			5	5	5	5	9	0		4				0		0.0		5
Brunei Darussala		52		84	92	63	66	58	48	44	53	2				0		0.2		6
Bulgaria	38	42	51	44	42	49	42	39	39	42	41	0	10	9	-1.56	1	-1.56	3.1	3.1	2
Burkina Faso	17	15	19	20	19	20	19	20	21	25	27	0	10	17	4.74	1	4.74	35.7	35.7	1
Burundi	60	84	102	97	96	95	90	94	95	84	75	0	8	9	-1.9	1	-1.57	26.0	26.0	1
Cambodia	127	130	138	154	148	147	186	209	225	255	244	0	10	25	7.94	1		71.1		6
Cameroon	21	27	33	49	33	70	66	94	101	121	134	0	10	52	18.30	0		30.3		1
Canada	6	7	6	6	5	5	5	5	5	5	3	0	10	20	-6.70	1	-6.70	1.5	1.5	3
Cape Verde	44	47	48			63	41	65	59	58	51	2				0		0.9		1
Cayman Islands	0	0	8	5	12	2	0	0	2			5				0		0.0		5
Central African F	102	123	131	132		65	121	97	95	77	142	1				0		12.8		1
Chad	26	29	35	58			56	49	50	62		2				0		27.2		1
Chile	29	26	24	23	20	19	16	14	17	13	15	0	10	24	-7.31	1	-7.31	2.4	2.4	5
China	41	38	36	36	36	37	36	47	61	68	71	0	10	31	8.32	1	-3.30	1311.2	1311.2	6
China, Hong Kor	103	111	118	85	90	101	92	86	81	81	75	0	10	15	-4.00	1	-4.00	5.2	5.2	6
China, Macao S	136	136	108	105	102	104	85	80	66	75	78	0	10	22	-6.51	1	-6.51	0.4	0.4	6
Colombia	25	20	23	27	28	27	26	27	25	23	24	0	10	10	0.80	1	-2.15	20.5	20.5	5
Comoros	22	21	20	23	17	19	15	10	11	14	14	0	10	26	-7.08	1	-7.08	0.4	0.4	1
Congo	156	116	127	161	288	296	294	226	276	273	230	0	10	31	8.16	1		12.9		1
Cook Islands	0	0	6	18	13	13	7	0	7	7	7	3				0		0.0		6
Costa Rica	18	19	19	22	15	16	13	13	17	12	11	0	10	23	-6.11	1	-6.11	0.6	0.6	5
Côte d'Ivoire	85	87	91	90	76	95	91	99	110	106	110	0	10	11	2.94	1	2.94	69.1	69.1	1
Croatia	47	44	46	39	36	31	32	30	26	23	23	0	10	25	-8.22	1	-8.22	1.8	1.8	2
Cuba	13	12	11	10	11	8	8	7	7	7	7	0	10	23	-7.09	1	-7.09	1.0	1.0	5
Cyprus		6	6	5	4	5	2	4	4	4	4	1	10	24	-5.04	1	-5.04	0.0	0.0	2
Czech Republic	19	18	18	16	14	13	11	11	10	10	9	0	10	25	-8.04	1	-8.04	1.0	1.0	3
Denmark	9	11	10	11	11	9	8	7	7	7	6	0	10	22	-6.65	1	-6.65	0.4	0.4	3
Djibouti	519	577	551	583	544	562	418	416	372	387	368	0	10	19	-5.99	1	-5.99	6.4	6.4	1
Dominica	15	9	7				3					6				0		0.0		5
Dominican Repu	77	65	61	67	61	54	45	51	49	53	47	0	10	14	-3.66	1	-3.66	8.5	8.5	5
DPR Korea		50	5	54	149	127	173	179	190	181	188	1	10	53	26.72	0		42.1		6
DR Congo	99	94	121	120	120	128	132	153	164	165	158	0	10	17	5.53	1	5.53	206.3	206.3	1
Ecuador	72	80	60	47	56	48	46	50	47	34	35	0	10	26	-7.19	1	-7.19	16.9	16.9	5
Egypt	20	22	20	18	16	16	16	16	16	16	14	0	10	14	-3.93	1	-3.93	18.4	18.4	4
El Salvador	29	28	28	27	24	23	24	21	21	27	24	0	10	11	-1.93	1	-4.45	3.4	3.4	5
Equatorial Guine	82	91	101				113					6				0		1.1		1
Eritrea	160	249	227	170	181	72	70	113	97	78	64	0	10	52	-14.43	0		4.4		1
Estonia	48	53	59	55	58	52	46	41	40	36	31	0	10	21	-6.64	1	-6.64	0.5	0.5	2
Ethiopia	67	92	106	107	131	133	151	157	160	157	151	0	5	19	0.0	1	0.04	266.1	266.1	1
Fiji	26	22	21	24	18	23	18	23	16	16	14	0	10	18	-4.63	1	-4.63	0.2	0.2	6
Finland	13	11	12	11	10	9	9	8	6	6	5	0	10	27	-9.07	1	-9.07	0.3	0.3	3
France	13	12	10	10	10	10	10	10	8	8		0	10 not 06	11	-4.5	1	-4.52	7.8	7.8	3
French Polynesi	39	41	46	40	26	26	26	20	24	25	27	0	10	29	-7.01	1		0.1		6
Gabon	88	129	122	138	173	208	170	177	204	195	233	0	10	21	6.30	1	6.30	4.6	4.6	1
Gambia	103	109	121	113	117	121	126	128	136	126	108	0	10 not 06	7	2.1	1	2.09	4.1	4.1	1
Georgia	71	173	131	100	93	86	97	92	89	101	103	0	8	25	0.7	1	0.71	3.8	3.8	2
Germany	14	14	13	12	11	8	8	8	7	7	6	0	10	29	-9.27	1	-9.27	5.4	5.4	3
Ghana	57	57	59	53	54	58	56	55	54	54	54	0	10	4	-0.63	1	-0.63	46.7	46.7	1
Greece	9	7	11	9	6	5	5	5	6	6	5	0	10	29	-5.73	1		1.8		3
Grenada	0	2	2	5	0		1	2	2			4				0		0.0		5
Guam					35	40	32	13	30	37	26	4				0		0.1		6
Guatemala	32	28	26	26	26	21	25	22	27	26	28	0	10	9	-0.04	1	-0.04	10.3	10.3	5
Guinea	58	57	60	64	66	70	73	76	84	76		0	10 not 06	12	4.1	1	4.07	23.0	23.0	1
Guinea-Bissau	137	115	65	87	93	100	108	110	118	111	130	0				0		3.5		1
Guyana	42	55	43	55	57	57	80	86	82	86	96	0	10	26	8.07	1	8.07	1.2	1.2	5
Haiti	83	124	118	108	122	117	136	156	159	154	148	0	10	14	3.77	1	3.77	28.2	28.2	5
Honduras	73	69	83	75	78	80	70	59	54	49	46	0	10	20	-6.09	1	-6.09	5.3	5.3	5
Hungary	43	41	39	34	30	29	27	25	22	18	17	0	10	29	-9.92	1	-9.92	1.9	1.9	2
Iceland	4	4	6	4	5	4	3	2	4	3	4	0	10	31	-3.52	1	-3.52	0.0	0.0	3
India	133	114	109	119	107	102	98	98	102	102	107	0	10	6	-1.31	1	-1.31	1932.9	1932.9	6
Indonesia	12	11	20	33	40	43	71	79	94	113	121	0	10	62	25.25	0		534.4		6
Iran (Islamic Rep	22	20	18	18	18	18	17	16	15	14	13	0	10	13	-4.30	1	-4.30	15.7	15.7	4
Iraq	131	116	124	123	39	41	45	43	38	34	28	0	10	64	-16.47	0		16.0		4
Ireland	12	11	11	12	10	10	10	9	9	9	10	0	10	10	-2.69	1	-2.69	0.6	0.6	3
Israel	7	7	8	8	9	9	8	8	8	6	6	0	10	14	-3.25	1	-3.25	0.5	0.5	3
Italy	7	8	10	8	6	7	7	7	7	7		0	10 not 06	15	-2.3	1	-2.33	4.0	4.0	3
Jamaica	5	5	5	4	5	5	4	5	4	3		0	10 not 06	11	-2.6	1	-2.64	0.2	0.2	5
Japan	33	33	35	32	31	28	26	25	23	21	20	0	10	19	-6.39	1	-6.39	35.5	35.5	3
Jordan	11	9	8	8	6	7	6	6	6	7	6	0	10	15	-3.77	1	-3.77	0.3	0.3	4
Kazakhstan	89	104	135	166	173	176	184	179	175	169	155	0	10	15	3.39	1	3.39	20.0	20.0	2
Kenya	124	137	165	188	205	228	244	271	290	288	296	0	10	24	8.42	1	8.42	115.1	115.1	1
Kiribati	417	582	340	309	300	221	225	320	343	361	404	0	10	30	-1.30	1		0.3		6
Kuwait	23	29	29	24	23	21	24	22	21	19	23	0	10	13	-3.29	1	-3.29	0.7	0.7	4
Kyrgyzstan	88	110	119	131	125	133	131	121	118	122	117	0	10	6	0.09	1	0.09	6.5	6.5	2
Lao PDR	30	39	43	47	43	45	49	50	57	67	69	0	10	20	5.85	1		8.8		6
Latvia	72	82	90	79	83	85	77	72	68	61	56	0	10	14	-4.47	1	-4.47	1.3	1.3	2
Lebanon	23	19	17	18	15	14	11	10	10	10	9	0	10	29	-9.23	1	-9.23	0.5	0.5	4
Lesotho	319	361	428	461	517	520	523	616	580	545		0	10 not 06	15	6.3	1	6.27	12.7	12.7	1
Liberia	37		65	57	49	77	105	76	130	100	124	1	8	33	10.4	0		10.3		1
Libyan Arab Jam	26	28	31	31	25	29	33	34	29	35	33	0	10	10	1.90	1	1.90	1.1	1.1	4
Lithuania	72	79	85	79	76	73	70	75	59	62	69	0	10	11	-2.98	1	-2.98	2.1	2.1	2
Luxembourg	10	9	10	9	10	7	7	12	7	8	7	0	10	20	-2.67	1	-2.67	0.1	0.1	3
Madagascar	88		96			99	98	109	110	102	115	3		7		1		47.5		1
Malawi	200	195	207	216	203	218	201	206	210	193	185	0	10	5	-0.73	1	-0.73	51.2	51.2	1
Malaysia	60	62	64	66	65	62	59	63	59	60	61	0	10	3	-0.71	1	-0.71	26.9	26.9	6

Maldives	84	67	67	57	48	50	44	48	41	41	33	Maldives	0	10	22	-6.99	1	-6.99	0.1	0.1	6
Mali	41	42	44	46	42	42	42	41	40	40	42	Mali	0	10	4	-0.86	1	-0.86	33.5	33.5	1
Malta	7	3	4	6	4	5	6	2	4	5	7	Malta	0	9 not 06	36	0.6	0	0.59	0.0	0.0	3
Marshall Islands	115		95	79	65	106	95	110	211	196	238	Marshall Isla	1				0		0.1		6
Mauritania	168	161	149	146	120				115	73	89	Mauritania	3				0		9.3		1
Mauritius	10	11	10	13	13	10	12	11	11	10	9	Mauritius	0	10	12	-1.65	1	-1.65	0.8	0.8	1
Mexico	22	25	22	20	18	19	17	17	15	18	17	Mexico	0	10	16	-4.21	1	-4.21	22.5	22.5	5
Micronesia	117	99	114	100	85	97	118	91	108	89	94	Micronesia	0	10	11	-0.87	1	-0.87	0.1	0.1	6
Monaco	0	0	0	0	0	0	0					Monaco	10				0		0.0		3
Mongolia	169	148	119	136	126	142	153	155	178	179	194	Mongolia	0	10	16	4.40	1		4.9		6
Montenegro										26	28	Montenegro	9				0		0.2		
Montserrat			15	35	0	0	0	20	0	18		Montserrat	6				0		0.0		5
Morocco	116	109	103	105	100	97	101	90	86	86	85	Morocco	0	10	9	-2.93	1	-2.93	28.8	28.8	4
Mozambique	112	112	114	116	116	118	133	146	155	162	168	Mozambique	0	10	16	5.10	1	5.10	90.4	90.4	1
Myanmar	51	39	33	43	67	92	122	161	203	223	253	Myanmar	0	10	66	24.81	0		82.7		6
Namibia	565	568	620	545	575	683	684	736	754	739		Namibia	0	10 not 06	12	3.7	1	3.70	13.6	13.6	1
Nauru				20	40	30	50	30		109	118	Nauru	4				0		0.0		6
Nepal	103	106	103	115	121	118	119	119	120	123	118	Nepal	0	10	6	1.46	1		48.8		6
Netherlands	11	9	9	9	8	9	8	8	8	7	6	Netherlands	0	10	12	-3.56	1	-3.56	1.1	1.1	3
Netherlands Anti	3	8	4	2	3	5	8	5	6		3	Netherlands	1				0		0.0		5
New Caledonia	53	44	44	37	44	28	29	17	26	21	20	New Caledo	0	10	34	-10.04	0	-10.04	0.1	0.1	6
New Zealand	9	9	10	12	9	10	8	10	9	8	8	New Zealan	0	10	12	-1.60	1	-1.60	0.4	0.4	3
Nicaragua	63	58	53	51	47	47	40	43	41	35	36	Nicaragua	0	10	16	-5.23	1	-5.23	3.2	3.2	5
Niger		40	49	36	42	44	43	57	53	59		Niger	1	9 not 06	17	4.6	1		22.9		1
Nigeria	13	14	17	20	21	36	29	33	41	44	49	Nigeria	0	10	40	13.63	0		390.5		1
Niue	91	0	0	51	0	0	228	0	0	0	0	Niue	7				0		0.0		6
Northern Marian	85	149	150	99	109	81	72	59	68	71		Northern Ma	0	10 not 06	36	-7.9	0				
Norway	5	5	6	5	5	6	5	7	6	6	6	Norway	0	10	13	2.80	1	2.80	0.2	0.2	3
Oman	13	13	12	11	13	12	12	10	12	10	13	Oman	0	10	10	-0.74	1	-0.74	0.3	0.3	4
Pakistan	3		65	15	8	23	35	46	65	87	110	Pakistan	1				0		291.7		4
Palau	29	83		169			56	45	25	50	59	Palau	3				0		0.0		6
Panama	48	53	50	48	40	57	51	52	54	51	50	Panama	0	10	9	0.47	1	0.47	1.5	1.5	5
Papua New Guir	66	161	221	248	195	229	198	221	215	207	203	Papua New	0	10	11	0.71	1		15.5		6
Paraguay	42	39	36	40	36	38	38	38	40	35	38	Paraguay	0	10	4	-0.09	1	-0.09	4.3	4.3	5
Peru	172	171	175	159	151	143	137	117	123	123	124	Peru	0	10	15	-4.52	1	-4.52	45.7	45.7	5
Philippines	236	273	222	195	157	138	149	164	158	162	171	Philippines	0	10	23	-4.44	1	-4.44	249.1	249.1	6
Poland	40	36	35	32	28	26	26	25	23	21	21	Poland	0	10	19	-6.20	1	-6.20	9.5	9.5	2
Portugal	52	51	52	45	41	42	42	37	34	31	30	Portugal	0	10	18	-5.94	1	-5.94	3.4	3.4	3
Puerto Rico	6	7	5	5	5	3	3	3	3	3	3	Puerto Rico	0	10	35	-9.77	0	-9.77	0.2	0.2	5
Qatar	48	38	44	44	45	44	40	38	36	41	41	Qatar	0	10	8	-0.96	1	-0.96	0.5	0.5	4
Rep. of Korea	87	73	75	69	74	79	74	71	72	80	79	Rep. of Kore	0	10	5	0.74	1	0.74	48.0	48.0	6
Republic of Mold	67	68	62	65	71	88	93	91	122	133	130	Republic of	0	10	30	9.26	1	9.26	5.5	5.5	2
Romania	107	106	115	117	124	130	136	130	132	121	113	Romania	0	10	8	-4.4	1	-4.42	27.5	27.5	2
Russian Federat	75	80	75	91	95	90	88	85	84	89	96	Russian Fed	0	10	7	1.23	1	1.23	183.7	183.7	2
Rwanda	60	74	87	85	75	64	69	76	72	78	86	Rwanda	0	10	10	-0.07	1		32.6		1
Saint Kitts & Nev	7	27	11	7	0	4	6	2	4	0		Saint Kitts &	2				0		0.0		5
Saint Lucia	24	15	13	11	6	10	11	9	9	9		Saint Lucia	0	10 not 06	26	-8.3	1		0.0		5
Samoa	18	19	13	18	24	12	17	15	19	13	13	Samoa	0	10	23	-2.14	1	-2.14	0.0	0.0	6
San Marino	0	4	0	0	4	0	4	3	0			San Marino	6				0		0.0		3
Sao Tome & Prir			78	70	69	68	65	310	81	89	99	Sao Tome &	2				0		0.2		1
Saudi Arabia		16	16	17	17	16	15	15	14	15	16	Saudi Arabia	1	10	6	-1.42	1	-1.42	10.6	10.6	4
Senegal	92	87	86	74	82	81	77	84	79	83		Senegal	0	10 not 06	5	-1.0	1	-0.99	31.4	31.4	1
Serbia	37	37	28	24	27	42	40	37	34	33	21	Serbia	0	10	22	-1.01	1		3.2		
Seychelles	20	23	14	26	25	23	35	12	21	16		Seychelles	0	10 not 06	32	-1.3	1		0.0		1
Sierra Leone	78	75	76	80	83	99	97	102	106	121	140	Sierra Leon	0	10	21	6.58	1	6.58	29.7	29.7	1
Singapore	54	53	56	46	43	37	36	37	33	31	30	Singapore	0	10	22	-6.84	1	-6.84	1.1	1.1	3
Slovakia	28	24	24	20	19	18	18	17	12	13	12	Slovakia	0	10	24	-7.84	1	-7.84	0.8	0.8	2
Slovenia	29	24	23	21	19	18	17	14	12	13	10	Slovenia	0	10	27	-9.10	1	-9.10	0.3	0.3	2
Solomon Islands	80	83	75	71	73	68	58	65	74	84	77	Solomon Isla	0	10	11	-0.15	1	-0.15	0.7	0.7	6
Somalia	62	69	65	70	81	94	99	120	148	157	140	Somalia	0	10	33	10.61	0		18.4		1
South Africa	258	291	323	331	333	322	462	483	562	564	628	South Africa	0	10	29	9.04	1	9.04	442.8	442.8	1
Spain	21	24	23	21	20	17	18	17	14	17	18	Spain	0	10	16	-4.22	1	-4.22	11.9	11.9	3
Sri Lanka	29	36	37	38	45	40	47	47	45	48	44	Sri Lanka	0	10	11	2.96	1	2.96	11.6	11.6	6
St Vincent & Gre	5	5	7	8	14	9	9	12	7	6	11	St Vincent &	0	10	32	2.52	1		0.0		5
Sudan	67	67	70	82	74	70	71	71	74	75	77	Sudan	0	10	6	0.55	1	0.55	87.8	87.8	1
Suriname	13	18	20	22	20	17	22	21	22	26		Suriname	0	10 not 06	12	4.8	1	4.78	0.3	0.3	5
Swaziland	242	303	358	401	555	569	619	703	724	717	730	Swaziland	0	5	29	3.5	1	3.49	13.1	13.1	1
Sweden	6	5	5	5	5	4	4	4	5	6	5	Sweden	0	10	11	0.30	1	0.30	0.5	0.5	3
Switzerland	11	10	10	10	7	7	8	8	7	7	6	Switzerland	0	10	20	-5.68	1	-5.68	0.5	0.5	3
Syrian Arab Rep	35	32	34	34	31	29	27	27	25	23	20	Syrian Arab	0	10	17	-5.53	1	-5.53	6.3	6.3	4
Tajikistan	28	36	41	42	45	56	64	67	70	83	81	Tajikistan	0	10	29	9.79	1	9.79	13.5	13.5	2
TFYR Macedoni	37	35	31	28	32	32	34	32	32	29	28	TFYR Mace	0	10	8	-1.09	1	-1.09	0.6	0.6	2
Thailand	69	51	27	49	56	81	80	88	88	92	89	Thailand	0	5	32	2.4	1		90.3		6
Timor-Leste							308	289	367	353	322	Timor-Leste	6				0		6.2		6
Togo	35	33	25	24	26	27	29	31	36	41	44	Togo	0	10	22	5.18	1		24.9		1
Tokelau	0			0	0	0		0		0	0	Tokelau	10				0		0.0		6
Tonga	23	21	31	22	24	12	29	16	12	18	18	Tonga	0	10	31	-5.26	1	-5.26	0.0	0.0	6
Trinidad & Toba	16	20	15	12	15	16	10	11	13	13	17	Trinidad & T	0	10	21	-2.23	1	-2.23	0.1	0.1	5
Tunisia	26	25	24	23	21	20	19	20	20	21	21	Tunisia	0	10	9	-2.13	1	-2.13	2.5	2.5	4
Turkey	32	40	39	33	26	25	26	25	24	27	27	Turkey	0	10	20	0.42	1	-4.66	21.8	21.8	2
Turkmenistan	49	79	87	92	90	86	79	80	71	66	66	Turkmenista	0	10	12	-3.26	1	-3.26	3.2	3.2	2
Turks & Caicos I				95		15	14	27				Turks & Cai	6				0		0.0		5
Tuvalu			179	138	157	156	126	290		115	86	Tuvalu	3				0		0.0		6
Uganda	124	126	126	132	123	145	155	154	156	142	136	Uganda	0	10	9	1.92	1		106.0		1
Ukraine	46	56	56	67	67	76	84	78	81	84		Ukraine	0	10 not 06	15	6.3	1	6.33	48.0	48.0	2
United Arab Emi	20		27	2	4	2	2	3	2	3	2	United Arab	1				0		0.7		4
United Kingdom	11	11	11	11	11	10	12	11	12	14	13	United Kingd	0	10	11	2.65	1	2.65	9.4	9.4	3
UR Tanzania	145	147	159	159	161	177	169	168	167	159	150	UR Tanzani	0	10	6	0.30	1	0.30	123.1	123.1	1
Uruguay	22	22	20	19	19	21	16	19	22	19	17	Uruguay	0	10	10	-1.50	1	-1.50	0.9	0.9	5
US Virgin Islands	7											US Virgin Is	9				0		0.0		5
USA	8	7	7	6	6	6	5	5	5	5	5	USA	0	10	15	-4.87	1	-4.87	13.2	13.2	3
Uzbekistan	51	56	61	62	64	69	81	80	77	81	89	Uzbekistan	0	10	15	4.88	1	4.88	32.8	32.8	2
Vanuatu	72	103	98	65	80	90	51	51	55	35	57	Vanuatu	0	10	33	-9.19	0	-9.19	0.1	0.1	6
Venezuela	25	26	27	28	26	25	24	26	26	26	25	Venezuela	0	10	4	-0.70	1	-0.70	11.3	11.3	5
Viet Nam	100	103	114	114	114	113	117	112	117	112	113	Viet Nam	0	10	3	0.51	1	0.51	149.7	149.7	6
Wallis & Futuna	55	96				7	127	100		46		Wallis & Fut	4				0		0.0		6
West Bank and (	1		1		3	2		1	1	1	1	West Bank a	3				0		0.8		4
Yemen	89	72	72	74	75	70	61	52	49	43	39	Yemen	0	10	23	-7.57	1		17.7		4
Zambia	426	431	437	442	477	434	499	487	480	432	409	Zambia	0	10	7	0.03	1	0.03	64.6	64.6	1
Zimbabwe	298	359	381	400	402	440	460	411	431	385	335	Zimbabwe	0	5	9	-7.0	1	-7.01	73.7	73.7	1
Zimbabwe	298	359	381	400	402	440	460	411	431	385	335										
															sums		155	136	8987.9	6549.2	

Rates are per 100 000 population.

Missing data -- interpolated
Change in incidence measured with fewer than 10 years data
Country excluded, but borderline case

Incident cases covered by each region and globa

		trends	total
regions	AFR	1.0	1908.6	2710
	CEEUR	2.0	399.6	406
	HI	3.0	102.4	104
	EMR	4.0	85.6	455
	LAC	5.0	316.1	317
	SEAWPI	6.0	3736.9	4993
	Total		6549.2	8985

Proportion of new cases in countries incl 0.7289

Appendix B. Independent variable (col F) and 32 expplanatory variables (raw data)

Country	Subregion code	Chge inc %/yr 97-06 exact	GDP 2005	dlngdp GDP %/yr	Poverty % below 1$/day	Poverty % below 2$/day	Gini index	Pop pop 15+	Urban (%)	Prevalence smoking M	Prevalence smoking F	Prevalence DM %	Prevalence undernutrition %	Adult HIV prev %	HIV prev in adult incident TB cases %	Per capita total expenditure on health $PPP 2004	Per capita government expenditure on health $PPP 2004	Total exp health as % GDP	TBexpenditure/cap	TBexpenditure/case	Health workers/1000 population	Change LifeM %/yr 1990-2005	LifeM 2005	ForeignTB %	Detection all new cases %	Detection new ss+ cases %/yr	Treatment success %	Detection all new * treat success	Detection ss+ *treat success	Improved water supply %	P Improved sanitation %	Human Dev Index 2005	Corruption Perception Index	Solid fuel use
Botswana	1	-1.3	15005	7.95	28	55.5	60.5	0.64	57.4			5.2	32	27.891	69.89	504.3	317.1	6.4				5.03	120		79.9	78.9	69.9	55.8	55.1	38	61	0.654	5.4	0.51
Burkina Faso	1	4.7	1314	4.85	27.2	71.8	39.5	0.54	18.3	20.30	8.17	3.7	15	2.011	10.96	76.5	41.9	6.1	110.6	420.1	0.3	-0.63	191		10.6	16.8	71.5	7.5	12.0	69	79	0.37	2.9	0.0975
Burundi	1	-1.6	635	1.44	54.6	87.6	42.4	0.55	10			1.7	66	3.259	16.81	16.2	4.2	3.2	187.0	214.3	0.3		190		22.9	27.1	78.5	18.0	21.3	50	66	0.413	2.5	0.0975
Cameroon	1		2108	3.17	17.1	50.6	44.6	0.58	54.6	12.92	2.72	3.7	26	5.429	25.62	82.7	23.1	5.2	380.5	288.9		0.48	149		77.4	105.5	73.7	57.0	77.7	52	75	0.532	2.4	0.83
Central African F	1		1150	0.43	66.6	84	61.3	0.57	38			4.4	44	10.734	41.91	54.3	20	4.1	75.6	95.1		0.97	193		45.5	79.4	64.9	29.5	51.5	19	42	0.384	2	0.0975
Chad	1		1762	8.35				0.54	25.3	14.02	2.16	3.6	35	3.515	17.94	41.7	15.4	4.2	71.2	110.0	0.2	0.04	208							58	0.388	1.8	0.0975
Congo	1		1356	3.12				0.58	60.2	12.30	0.80	5	33	5.274	25.04	30.1	14.8	2.5				-0.13	108		63.5	59.1	28.1	17.9	16.6	69	84	0.548	2.1	0.84
Côte d'Ivoire	1	2.9	1644	0.40	14.8	48.8	44.6	0.58	45	15.42	1.73	4.6	13	5.034	24.13	63.6	15.1	3.8	204.5	188.6		1.51	196		28.9	42.8	75.0	21.7	32.1	43	46	0.432	2.1	0.74
DR Congo	1	5.5	798	0.97				0.53	32.1	13.83	1.58	3	74	3.23	16.69	15.3	4.3	4	132.6	78.6			205		44.5	70.1	84.9	37.8	59.5			0.411	1.9	0.14
Equatorial Guine	1		20626	19.68				0.58	38.9					3.204	16.57	223.2	172	1.6				1.29	205							23	22	0.642	1.9	
Ethiopia	1	0.0	990	3.62	23	77.8	30	0.56	16	5.79	0.62	2.3	46	1.944	10.63	21.1	10.9	5.3	60.4	37.7	0.2	-1.45	164		45.2	31.1	78.0	35.2	24.3		88	0.406	2.4	0.0975
Gabon	1	6.3	7216	-0.06				0.64	83.6			4.9	5	7.882	33.92	264.2	181.7	4.5				-0.08	91		63.3	57.9	46.4	29.4	26.8	45	61	0.677	3.3	0.28
Kenya	1	8.4	1258	3.05	22.8	58.3	42.5	0.57	20.7	24.12	1.65	3.3	31	6.09	28.01	85.6	36.5	4.1	234.0	78.1		1.48	120		91.1	78.6	82.4	75.1	64.7		79	0.521	2.1	0.81
Lesotho	1	6.3	2132	2.19	36.4	56.1	63.2	0.60	18.7			3.8	13	23.243	64.50	138.5	116.6	6.5				-0.84	132		90.3	78.5				55	61	0.549	3.3	0.83
Liberia	1		968	5.89				0.53	58.1			4.6	50	3.36	17.26	22.2	14.2	5.6	200.8	192.1			235		42.5	63.6	76.0	32.3	48.3	40	73		2.1	
Malawi	1	-0.7	645	1.69	20.8	62.9	39	0.53	17.2	19.30	4.03	2.1	35	14.091	49.60	57.8	43.2	12.9			0.3	-3.40	125		47.0	38.0	73.2	34.4	27.8	36	43	0.437	2.7	0.0975
Mozambique	1	5.1	1381	7.87	36.2	74.1	47.3	0.56	34.5	21.40	3.22	3.7	44	14.502	50.44	42	28.7	4	253.3	150.9	0.3	-3.12	145		37.4	48.4	79.4	29.7	38.4	57	87	0.384	2.8	0.8
Namibia	1	3.7	7898	4.58	34.9	55.8	74.3	0.61	35.1	30.98	9.32	4.2	24	17.607	56.18	407.4	281.1	6.8	618.3	84.2		-2.18	62		100.2	95.1	74.6	74.8	71.0	49	48	0.65	4.5	0.95
Nigeria	1		1148	4.16	70.8	92.4	43.7	0.56	48.2	11.66	0.85	4.5	9	3.859	19.41	52.7	16.1	4.6	67.1	141.0	1.5	-1.12	194		17.6	23.3	74.9	13.2	17.4	59	74	0.47	2.2	0.67
Rwanda	1		1350	3.67	60.3	87.8	46.8	0.57	19.3			1.5	33	3.07	15.97	125.9	71.5	7.5			0.2	1.11	203		23.7	29.4	82.9	19.6	24.4	83	88	0.452	2.8	0.0975
South Africa	1	9.0	12063	4.41	10.7	34.1	57.8		59.3	27.06	8.86	4.4	2	18.785	58.12	748	302	8.6	865.8	152.0	4.6	0.81	68		61.5	72.3	71.4	43.9	51.6		62	0.674	5.1	0.18
Swaziland	1	3.5	5120	2.59	47.7	77.8	50.4	0.60	24.1	11.92	2.14	4	22	33.385	75.04	367.2	234.3	6.3			3.4	2.53	160		60.8	48.2	42.5	25.8	20.5	44	60	0.547	3.3	
Uganda	1		1551	4.38			45.7	0.51	12.6	17.26	2.48	2	19	6.663	29.99	135.3	44.3	7.6	56.9	40.0	0.1	-1.06	136		37.1	44.5	73.2	27.1	32.5	46	62	0.505	2.8	0.0975
UR Tanzania	1	0.3	749	5.65	57.8	89.9	34.6	0.56	24.2	21.20	3.28	2.9	44	6.457	29.29	28.5	12.4	4	137.1	86.1	0.4	-1.78	122		46.7	46.7	82.2	38.3	38.4	50	58	0.467	3.2	0.025
Zambia	1	0.0	1016	4.03	63.8	87.2	50.8	0.54	35	17.04	3.47	3.8	46	16.957	55.06	62.8	34.4	6.3				0.08	182		71.1	52.4	83.9	59.6	44.0	78	81	0.434	2.7	0.85
Zimbabwe	1	-7.0	2494	-3.19	56.1	83	50.1	0.60	35.9	20.77	2.88	4	47	20.116	60.17	138.6	63.9	7.5			0.6	1.80	86		58.4	42.1	67.8	39.6	28.5	94	85	0.513	2.1	0.73
Algeria	1	1.9	7376	4.93	2	15.1	35.3	0.70	63.3	31.30	0.27	8.4	4	0.09	0.54	166.9	121.1	3.6				-3.78	39		110.1	101.6	86.9	95.6	88.3	36	53	0.733	3	0.025
Angola	1		2975	6.87				0.54	53.3			3.3	35	3.681	18.65	37.5	29.8	1.9					260		78.9	79.0	72.2	57.0	57.0	63	67	0.446	2.2	0.0975
Benin	1	1.7	1347	3.42	30.9	73.7	36.5	0.56	40.1			4.4	12	1.791	9.86	40.4	20.7	4.9	117.1	302.1		-1.39	150		44.1	83.8	86.7	38.2	72.7			0.437	2.7	0.95
Cape Verde	1		6797	6.29				0.60	57.3							225.1	170.5	5.2				-3.55	35		28.9	33.3	64.4	18.6	21.5			0.736	4.9	0.36
Comoros	1	-7.1	1998	2.32				0.58	37	23.08	10.44			0.03	0.18	24.9	14.2	2.8				-3.59	71		30.4	41.6	91.4	27.8	38.0			0.561	2.6	0.76
Djibouti	1		2404	2.55				0.62	86.1					3.106	16.13	87.2	60.3	6.3				-1.56	133		44.3	41.2	79.6	35.2	32.7	43	60	0.516	2.9	0.06
Eritrea	1		976	0.79				0.57	19.4	16.11	1.13	2.3	75	2.364	12.68	27.4	10.7	4.5				-4.11	78		66.9	34.7	88.1	58.9	30.5		82	0.483	2.8	0.8
Gambia	1	2.1	2038	3.60	59.3	82.9	50.2	0.59	53.9	27.76	2.30	4.1	29	2.442	13.06	87.5	23.7	6.8				-1.17	137		43.2	65.8	48.8	21.1	32.1	55	75	0.502	2.3	0.28
Ghana	1	-0.6	2605	4.40	44.8	78.5	40.8	0.61	47.8	8.22	0.65	4.2	11	2.273	12.25	94.7	40	6.7	58.0	105.8	0.9	-0.59	112		25.6	37.6	72.6	18.6	27.3	44	50	0.553	3.7	0.88
Guinea	1	4.1	2357	2.50			38.6	0.57	33			4.1	24	1.517	8.46	95.6	12.6	5.3			0.6	-3.08	150								59	0.456	1.9	0.0975
Guinea-Bissau	1		740	-2.63			47	0.53	29.6			3.8	39	3.79	19.12	28.4	7.8	4.8				-1.56	200		57.9	67.0	69.2	40.1	46.4	40	46	0.374	2.2	
Madagascar	1		944	2.01	61	85.1	47.5	0.56	26.8			3	38	0.514	3.01	28.9	17.1	3	50.8	49.8	0.4	-2.24	119		43.8	73.2	74.5	32.6	54.5	34	50	0.533	3.2	0.0975
Mali	1	-2.2	1230	4.68	36.1	72.1	40.1	0.52	30.5	19.21	2.48	4.1	29	1.734	9.57	54	26.6	6.6	69.5	200.0	0.2	-0.93	218		14.2	25.5	75.3	10.7	19.2	38	53	0.38	2.7	0.0975
Mauritania	1		2225	4.05	25.9	63.1	39	0.60	40.4	23.07	3.65	4.6	10	0.681	3.95	42.9	29.8	2.9				-0.43	125		27.0	35.9	54.6	14.8	19.6	100	100	0.55	2.6	0.65
Mauritius	1	-1.7	12537	5.31				0.76	42.4	36.15	1.14	11.1	5	0.55	3.21	516.1	282.4	4.3				-2.89	15		14.7	25.2	86.4	12.7	21.8	39	46	0.804	4.7	0.025
Niger	1		919	2.40	60.6	85.8	50.5	0.52	16.8			3.7	32	1.102	6.27	25.9	13.6	4.2			0.3	-1.49	256									0.374	2.6	0.0975
Sao Tome & Prir	1		1568	3.77				0.65								141.4	121.8	11.5					118		95.9					65	76			0.95
Senegal	1	-1.0	1920	4.19	17	56.2	41.3	0.81	41.6	19.88	1.30	4.6	20	0.912	5.23	72.1	29	5.9	92.4	110.3		-0.56	136									0.499	3.6	0.41
Seychelles	1		17989	0.57				0.80		35.51	7.02					634.2	477.8	6.1	1587.6	9146.0		-2.35	13								57	0.843	4.5	0.025
Sierra Leone	1	6.6	824	8.59	57	74.5	62.9	0.83	40.7			4.3	51	1.558	8.67	34.1	20.1	3.3				-0.46	282		26.6	35.1	85.6	22.8	30.0		29	0.336	2.1	0.92
Somalia	1								35.2			2.8		0.862	4.96								225		61.7	83.0	88.6	54.6	73.5	64	70		2	
Sudan	1	0.5	2427	5.82				0.59	40.8			4	26	1.587	8.82	54	19.1	4.1	84.5	111.1	1	-1.93	90		30.7	31.2	82.2	25.2	25.6	50	52	0.526	1.8	0.0975
Togo	1		1520	1.08				0.57	40.1			4.1	24	3.239	16.73	62.6	13	5.5			0.3	-0.59	139		11.0	19.5	70.8	7.8	13.8	96	96	0.512	2.3	0.76
Albania	2	-4.5	5302	8.10	2	10	31.1	0.74	45.4	39.64	3.91	4.5	6			338.7	149.4	6.7			5.4	-5.94	18		78.1	36.8	76.8	60.0	28.2	97	97	0.801	2.9	0.5
Bosnia & Herzeg	2	-6.5	7929	7.44			26.2	0.82	45.7	48.77	32.04	7	9			603	297.6	8.3			5.7	-2.60	15		84.4	62.5	96.5	81.5	60.3	100	100	0.803	3.3	0.25
Croatia	2	-8.2	13342	6.20	2	2	29	0.84	56.5	37.49	25.38	7.1	7			916.8	742.8	7.7			7.7	-3.64	7		56.4							0.85	4.1	
Cyprus	2	-5.0	27765	4.22				0.80	69.3							1128	499.4	5.8				-5.85	5		102.0	50.4	62.5	63.7	31.5	99	99	0.903	5.3	0.025
Hungary	2	-9.9	18145	6.78	2	2	26.9	0.84	66.3	44.56	30.46	7.6	2	0.06	0.36	1307.9	936.5	7.9			11.9	-5.03	8		82.7	49.3	45.1	37.3	22.2			0.874	5.3	0.025
Poland	2	-6.2	13741	5.76	2	2	34.5	0.84	62.1	44.03	25.60	7.6	2	0.12	0.72	814.1	558.8	6.2			7.7	-5.44	8		80.6	66.6	76.9	62.0	51.2	93	93	0.87	4.2	0.025
Serbia & Monten	2			7.96				0.57	52.2	41.44	40.37			0.19	1.13	436.2	314.6	10.1							58.9		83.3	49.1		100	100		3.4	0.41
Slovakia	2	-7.8	16024	5.99				0.60	56.2	41.38	18.51			0.01	0.06	1060.6	782.4	7.2			10.6	-3.34	9			42.9	92.4		39.6			0.863	4.9	0.025
Slovenia	2	-9.1	22261	5.68	2	2	28.4	0.56	51	29.58	19.93	7.6	3	0.02	0.12	1814.9	1371.7	8.7			9.4	-6.08	4			70.7	84.4		59.7			0.917	6.6	0.025
TFYR Macedonia	2	-1.1	7221	4.00				0.80	68.9					0.02	0.12	471.2	334.7	8			8.1	-5.96	17		92.2	66.6	84.4	77.8	56.2	85	96	0.801		0.75
Turkey	2		8539	3.78	3.4	18.7	43.6	0.72	67.3	53.26	20.45	7.8	3			556.8	402.4	0	572.1	2120.9	4.2	-6.60	29		38.6	80.4	89.5	34.5	71.9		92	0.775	4.1	0.11
Armenia	2	5.8	4494	13.60	2	31.1	33.8	0.79	64.1	52.88	4.00	7.7	24	0.148	0.88	225.6	59.1	5.4			8.8	-4.59	29		71.9	58.0	72.5	52.1	42.0	68	77	0.775	3	0.26
Azerbaijan	2	1.6	4811	11.60	3.7	33.4	36.5	0.75	51.5			7.3	7	0.11	0.66	138.3	34.6	3.6			12	-1.10	89		66.8	48.8	62.8	42.0	30.7	100	100	0.746	2.1	0.49
Belarus	2		8002	9.14	2	2	29.7	0.84	72.2	63.57	17.41	7.6	4	0.335	1.98	426.5	319.3	6.2			17.5	-3.12	9		85.9	39.9	73.1	62.7	29.1	99	99	0.804	2.1	0.19
Bulgaria	2	-1.6	8949	7.46	2	6.1	29.2	0.86	70	44.59	21.81	7.6	8			671.2	386.3	8	533.3	1277.6	8.3	-1.24	15		97.1	93.7	85.8	83.3	80.4	100	100	0.824	4.1	0.17
Estonia	2	-6.6	16127	9.16	2	7.5	35.8	0.85	69.1	48.96	25.29	7.6	2	1.32	7.43	751.5	571.2	5.3	6635.8	18421.0	9.8	-5.11	7		71.8	63.7	71.6	51.4	45.6	80	82	0.86	6.5	0.15
Georgia	2	0.7	3272	8.38	6.5	25.3	40.4	0.81	52.2	55.81	5.83	7.4	9	0.221	1.31	171	46.9	5.3	926.6	921.2	7.9	-0.30	45		113.4	106.8	72.6	82.3	77.5	87	86	0.754	3.4	0.42
Kazakhstan	2	3.4	8345	10.51	2	16	33.9	0.76	57.3	43.90	9.76	5.6	6	0.256	1.52	263.8	157.8	3.8			9.5	-2.15	31		104.6	68.6	71.1	74.3	48.8	78	77	0.794	2.1	0.05
Kyrgyzstan	2	0.1	2010	5.11	2	21.4	30.3	0.69	35.8	45.03	2.18	5.1	4	0.14	0.83	101.6	41.6	5.6			10.1	-1.17	67		88.7	63.2	84.7	75.2	53.5	99	99	0.696	2.1	0.76
Latvia	2	-4.5	13540	10.09	2	4.7	37.7	0.86	67.8	53.19	19.11	7.6	3	0.785	4.53	851.6	482.3	7.1	5676.8	9294.8	8.2	-3.67	10		87.2	85.0	73.5	64.1	62.5			0.855	4.8	0.1
Lithuania	2	-3.2	14569	8.68	2	7.8	36	0.83	66.6	44.39	17.59	7.6	2	0.17	1.01	843.1	632.7	6.5			12.4	-2.17	9		99.9	109.0	70.0	69.9	76.3		92	0.862	4.8	0.025
Republic of Mold	2	9.3	2658	7.20	2	20.8	33.2	0.80	46.7	45.90	5.27	7.6	11	1.052	6.00	138.2	78.5	7.4	1652.6	1352.0	9.2	-4.41	16		79.5		62.0	49.3			57	0.708	2.8	0.63
Romania	2	-4.4	9056	6.50	2	12.9	31	0.84	53.7	45.20	23.62	7.6	2			432.7	286	5.1	659.8	548.8	6.2	-3.16	19		75.3	79.3	81.9	61.7	64.9	94	97	0.813	3.7	0.23
Russian Federat	2	1.2	10984	8.40	2	12.1	39.9	0.85	73	70.23	23.17	7.6	3	1.092	6.21	582.7	357.5	6	1964.4	2198.9	12.5	-2.31	14		70.6	36.6	57.6	40.7	21.1		59	0.802	2.3	0.07

Tajikistan	2	9.8	1359	9.72	7.4	42.8	32.6	0.61	24.7			4.9	56	0.14	0.83	53.9	11.6	4.4	423.2	504.4	7.2	-2.43	71		88.3	32.7	86.2	76.1	28.2		72	0.673	2.1	0.75
Turkmenistan	2	-3.3	7740	15.19			40.8	0.68	46.2			5.2	7	0.01	0.06	245.2	168.9	4.8				0.45	104		89.1	58.1	81.1	72.2	47.1	96	96	0.713	2	0.2
Ukraine	2	6.3	7023	9.07	2	4.9	28.1	0.85	67.8	63.33	19.29	7.6	2	1.401	7.86	426.6	241.8	6.5			11.2	-2.67	17		85.3					94	82	0.788	2.7	0.06
Uzbekistan	2	4.9	2096	5.72	2	2	36.8	0.67	36.7	24.17	1.28	5.1	25	0.21	1.25	160.1	74.5	5.1	506.4	626.0	13.7	-0.98	68			48.1	80.5		38.8			0.702	2.1	0.72
Andorra	3									35.73	24.49					3546	2452.9	7.1					6		93.3	138.2	80.0	74.6	110.6	100	100			0.025
Australia	3	-0.7	31425	4.32	0	0	35.2	0.80	88.2	26.52	20.32	5	2	0.1	2.92	3123.3	2106.8	9.6			10.8	-3.30	6		57.4	40.0	79.9	45.9	31.9	100	100	0.962	8.6	0.025
Austria	3	-5.4	34173	3.75	0	0	29.1	0.84	66	45.47	35.85	7.9	2	0.29	8.03	3209	2267.7	9.7			9.3	-4.66	5	44	90.5	50.5	75.2	68.1	38.0	100	100	0.948	8.1	0.025
Belgium	3	-2.3	32808	3.76	0	0	33	0.83	97.2	28.85	21.53	5.2	2	0.27	7.51	3132.9	2228.1	9.7			15.6	-4.66	5	51	75.1	55.2	66.4	49.9	36.7	100	100	0.946	7.1	0.025
Canada	3	-6.7	33779	4.42	2	0	32.6	0.82	80.1	23.88	18.02	7.4	2	0.3	8.28	3173	2215.4	9.8			12.2	-1.97	6		56.3	36.1	38.6	21.7	13.9	100	100	0.961	8.7	0.025
Czech Republic	3	-8.0	21192	5.40	0	2	25.4	0.85	73.5	35.95	23.35	7.6	2	0.03	0.89	1412.4	1259.3	7.3			13.4	-7.18	4	13	93.5	56.8	71.7	67.1	40.7	100	100	0.891	5.2	0.025
Denmark	3	-6.7	34669	3.64	0	0	24.7	0.81	85.6	35.82	29.39	5.5	2	0.22	6.20	2779.6	2287.4	8.6			13.6	-3.96	5	61	85.0	68.5				100	100	0.949	9.4	0.025
Finland	3	-9.1	32678	5.01	0	0	26.9	0.83	61.1	30.72	20.98	5.9	2	0.08	2.35	2202.5	1700	7.4			25.6	-3.80	4	10	97.5					100	100	0.952	9.4	0.025
France	3	-4.5	29276	3.65	0	0	32.7	0.82	76.7	34.40	22.71	5.9	2	0.42	11.23	3040.1	2382.4	10.5			10.2	-3.99	5	45	61.8					100	100	0.952	7.3	0.025
Germany	3	-9.3	29550	3.32	0	0	28.3	0.86	75.2	35.96	21.95	7.9	2	0.12	3.48	3171.3	2439.8	10.6			13.2	-3.99	5	43	90.6							0.935	7.8	0.025
Greece	3		24399	6.02	0	0	34.3	0.86	59	62.39	32.76	5.9	2	0.17	4.86	2179.4	1149.8	7.9			7.5	-5.26	5		32.0							0.926	4.6	0.025
Iceland	3	-3.5	37898	4.85	0	0		0.78	92.8	25.66	25.22			0.2	5.67	3294.4	2746.3	9.9	53.0	1562.5		-4.69	3		103.0	71.0	100.0	103.0	71.0			0.968	9.2	0.025
Ireland	3	-2.7	41492	6.83	0	0	34.3	0.79	60.5	24.95	23.82	5.1	2	0.23	6.47	2617.8	2080	7.2			19	-4.10	5	31	74.3					100	100	0.959	7.5	0.025
Israel	3	-4.8	29044	2.96	0	0	39.2	0.72	91.6	30.91	17.60	6.9	2			1971.6	1380.1	8.7			10.3	-5.31	5		74.3	31.2						0.932	6.1	0.025
Italy	3	-2.3	29502	3.17	0	0	36	0.86	67.6	30.61	16.43	5.8	2	0.5	13.10	2414.4	1812.4	8.7			10.5	-4.79	4	44						100	100	0.941	5.2	0.025
Japan	3	-6.4	30889	3.30	0	0	24.9	0.86	65.8	46.00	13.66	4.9	2	0.024	0.72	2299.1	1861.2	7.8			10.4	-2.73	4		98.5	63.0	59.6	58.7	37.5			0.953	7.5	0.025
Luxembourg	3	-2.7	75863	5.68	0	0		0.81	82.8	37.12	27.29			0.2	5.67	5177.6	4678.5	8				-4.16	5	68	63.9	4.3						0.944	8.4	0.025
Malta	3	0.6	19672	3.09				0.83	95.3	32.05	21.83			0.13	3.76	1732.7	1318	9.2				-4.09	6	74	135.0	40.1	100.0	135.0	40.1			0.878	5.8	0.025
Monaco	3				0	0										4743.9	3593.3	9.9				-5.43	4							100	100			0.025
Netherlands	3	-3.6	33198	3.47	0	0	30.9	0.82	80.2	38.33	28.51	5.2	2	0.22	6.20	3092	1928.1	9.2	2766.1	40004.8	16.7	-3.96	5	66	87.3					97		0.953	9	0.025
New Zealand	3	-1.6	24738	4.43	0	0	36.2	0.79	86.2	25.84	24.33	6.4	2			2080.9	1609.7	8.4			10.9	-4.06	6		112.1	26.6	85.7	96.1	22.8	100	100	0.943	9.4	0.025
Norway	3	2.8	41630	3.79	0	0	25.8	0.80	77.4	32.72	28.27	3.6	2	0.11	3.20	4079.9	3406	9.7			24.9	-5.43	4	78	115.0	42.7	91.5	105.2	39.1			0.968	8.7	0.025
Portugal	3	-5.9	21791	3.05	0	0	38.5	0.84	57.6	38.52	24.31	5.7	2	0.4	10.75	1896.9	1358.8	9.8			7	-6.81	5	12	90.8	86.6	88.9	80.8	77.0			0.897	6.5	0.025
San Marino	3							0.58								3197.8	2526.8	7.4				-9.23	3							100	100			0.025
Singapore	3	-6.8	30386	5.16	0	0	42.5	0.86	100			10.1		0.292	8.08	1117.9	380.6	3.7			5.6	-7.28	3		73.7	106.4	82.4	60.7	87.7	100	100	0.922	9.3	0.025
Spain	3	-4.2	26296	4.55	0	0	34.7	0.86	76.7	36.01	27.71	5.7	2	0.62	15.77	2099.2	1487.5	8.1			6.8	-3.96	5	19	75.5					100	100	0.949	6.7	0.025
Sweden	3	0.3	32325	4.70	0	0	25	0.83	84.2	19.79	22.68	5.2	2	0.19	5.40	2827.9	2401.8	9.1			13.5	-3.80	4	73	77.4					100	100	0.956	9.3	0.025
Switzerland	3	-5.7	35290	3.39	0	0	33.7	0.83	75.2	29.43	20.31	7.9	2	0.4	10.75	4011.3	2347.3	11.5	55.4	790.4	12.1	-3.96	5	60	64.0					100	100	0.955	9	0.025
United Kingdom	3	2.6	33314	4.49	0	0	36	0.82	89.7	34.68	31.10	2.9	2	0.24	6.73	2559.9	2208.6	8.1				-3.48	6	64	98.4					100	100	0.946	8.4	0.025
USA	3	-4.9	41197	3.94	0	0	40.8	0.79	80.8	25.70	20.35	7.8	2	0.6	15.33	6096.2	2724.7	15.4			13.2	-2.16	8	55	104.7	87.4	63.8	66.8	55.7	4	39	0.951	7.2	
Afghanistan	4		1331	11.34				0.53	22.9					0.004	0.02	18.9	3.2	4.4	64.9	88.8	0.4	-0.08	257		57.3	65.2	89.7	51.4	58.5				1.8	0.0975
Bahrain	4		21828	5.63				0.74	96.5	26.24	2.66			0.245	1.45	871.4	585.7	4				-3.70	11		93.6	10.5	93.3	87.4	9.8	94	98	0.866	5	0.025
Egypt	4	-3.9	4538	4.50	3.1	43.9	34.4	0.67	42.8	25.98	4.10	11	4	0.013	0.08	258.3	98.7	6.1			4.9	-7.34	33		52.3	57.4	78.5	41.1	45.1	92	94	0.708	2.9	0.025
Iran	4	-4.3	8087	5.68	2	7.3	43	0.71	66.9	26.19	4.52	7.8	4	0.153	0.91	603.7	288.4	6.6				-4.50	36		57.8	68.1	82.5	47.7	56.2	83	81	0.759	2.9	0.72
Iraq	4							0.59	66.9	25.72	1.85	10		0.006	0.04	135.3	106.2	5.3	117.6	358.2	3.6				46.6	40.2	85.5	39.9	34.4	97	97		1.5	0.025
Jordan	4	-3.8	5209	5.30	2	7	38.8	0.63	82.3	61.74	7.88	9.8	6	0.02	0.12	501.7	242.8	9.8	173.7	2698.8	4.8	-2.80	26		116.0	75.5	82.6	95.8	62.3			0.773	4.7	0.025
Kuwait	4	-3.3	18843	3.47				0.76	98.3			14.4	5			537.5	416.9	2.8	1526.1	7931.0	5.4	-1.99	12		98.8	96.8	63.1	62.3	61.1	100	100	0.891	4.3	0.025
Lebanon	4	-9.2	5545	3.36				0.71	86.6	29.01	6.90	7.7	3	0.141	0.84	816.5	223.6	11.6	108.1	989.3	4.4	-1.33	30		81.3	55.2	91.6	74.4	50.5	71		0.772	3	0.025
Libyan Arab Jam	4	1.9	11517	3.94				0.70	84.8			4.4	2	0.334	1.97	328.1	245.8	3.8				-5.02	19		182.4	149.4	68.6	125.1	102.5	75	81	0.818	2.5	0.025
Morocco	4	-2.9	4529	4.72	2	14.3	39.5	0.70	58.7	29.54	0.32	8.1	6	0.099	0.59	233.9	80.3	5.1	76.0	91.1	1.5	-5.13	40		90.7	94.9	81.3	73.7	77.1	80		0.646	3.5	0.05
Oman	4	-0.7	17288	4.46	2	2		0.66	71.5	24.82	1.03	13.1		0.094	0.56	418.9	341.2	3			4.2	-6.31	12		99.4	78.0	90.4	89.8	70.5	83	91	0.814	4.7	0.025
Pakistan	4		2537	4.58	17	73.6	30.6	0.63	34.9	31.66	5.21	9.6	24	0.1	0.60	47.7	9.4	2.2	12.0	13.7	1.1	-1.76	100		59.5	49.7	83.3	49.6	41.5			0.551	2.4	0.72
Qatar	4	-1.0	31663	4.00				0.78	95.4							687.9	526.1	2.4				-4.65	12		69.0	52.0	83.3	57.5	43.4	90		0.875	6	0.025
Saudi Arabia	4	-1.4	15765	3.18	2	2		0.58	81	25.57	3.22	16.7	4			601.1	459.7	3.9			4.4	-3.45	26		34.6	40.0	65.2	22.5	26.1	80	93	0.812	3.4	0.025
Syrian Arab Rep	4	-5.5	3979	1.86				0.63	50.6	41.96 . . .		10.6	4			108.8	51.5	4.7	326.4	1442.4	3.3	-6.94	15		61.8	48.1	88.5	54.7	42.5	81	93	0.724	2.4	0.32
Tunisia	4	-2.1	8276	5.61	2	6.6	39.8	0.74	65.3	51.02	1.72	5.2	2			502.3	261.8	6.2	32.4	157.3		-5.06	24		83.2	81.4	90.0	74.8	73.2	100	100	0.766	4.2	0.05
United Arab Emi	4		27340	1.51				0.80	76.7	27.17	2.45	19.5	3			502.7	351.6	2.9			6.2	-3.36	9		12.9	17.3	72.6	9.4	12.6		92	0.868	5.7	0.025
West Bank and (	4																								5.1	4.3	100.0	5.1	4.3	71	67			0.7
Yemen	4		739	2.03	15.7	45.2	33.4	0.54	27.3			2.9	38	0.13	0.77	81.6	31.2	5	95.6	221.1	0.7	-1.99	102		46.0	41.1	80.5	37.0	33.1			0.508	2.5	0.42
Anguilla	5															516.2	364.5	4.8															
Antigua & Barbu	5		12755																				12		72.6					94	96			
Argentina	5	-4.1	14481	2.17	6.6	17.4	51.3	0.74	90.1	34.61	24.60	5.6	3	0.61	7.39	1274.3	577.6	9.6				-3.66	16		61.4	71.2	52.6	32.3	37.4			0.869	2.9	0.025
Bahamas	5		19391					0.72	90.4					3.274	16.88	1348.6	675.7	6.8				-4.85	15									0.845		0.025
Barbados	5		17756	3.48				0.81	52.7	18.48	3.28			1.548	8.62	1150.7	731.2	7.1				-1.95	12		15.3	27.4	90.9	13.9	24.9			0.892	6.9	0.025
Belize	5		7388	5.82				0.62	48.3					2.49	13.29	338.6	182.1	5.1				-4.56	17		57.0	98.6	74.6	42.5	73.5			0.778	3	0.43
Bermuda	5																								106.7					72	85			0.025
Bolivia	5	-2.7	2767	2.65	23.2	42.2	60.1	0.62	64.2	35.84	29.82	5.8	23	0.134	0.80	185.9	112.9	6.8	141.5	133.3	1.1	-4.21	65		45.8	69.4	78.5	36.0	54.4	83	90	0.695	2.9	0.25
Brazil	5	-2.1	8657	2.94	7.5	21.2	57	0.72	84.2	16.76	9.49	6.2	7	0.539	13.98	1519.7	821.7	8.8	151.8	352.7	2.6	-3.94	33		79.2	54.2	76.6	60.7	41.5			0.8	3.5	0.12
British Virgin Isla	5																																
Cayman Islands	5																													90	95			0.025
Chile	5	-7.3	12134	4.61	2	5.6	54.9	0.75	87.6	42.57	33.27	5.6	4	0.285	7.90	720.3	338.4	6.1			1.7	-5.31	10		96.7	142.6	79.1	76.4	112.7	92	93	0.867	7	0.025
Colombia	5	-2.1	7620	2.84	7	17.8	58.6	0.70	72.7			5	13	0.608	3.54	570	490.1	7.8			1.9	-3.64	21		52.1	83.2	63.5	33.1	52.9		97	0.791	3.8	0.15
Costa Rica	5	-6.1	10773	4.48	3.3	9.8	49.8	0.72	61.7	26.69	7.32	9.3	5	0.288	1.70	592	456	6.6			2.4	-2.51	12		76.5	102.9	88.6	67.7	91.1		91	0.846	5	0.23
Cuba	5	-7.1						0.81	75.5	44.75	29.60	9.3	2	0.068	0.41	229.1	201.3	6.3			13.4	-4.15	7		70.4	94.4	91.4	64.3	86.3			0.838	4.2	0.21
Dominica	5		6380	2.14												309.3	220.5	5.9				-1.08	15							84	95	0.798	5.6	0.21
Dominican Repu	5	-3.7	8268	5.20	2.8	16.2	51.6	0.66	66.8	14.93	10.99	8.7	29	1.114	6.33	377	119.1	6	559.1	994.0	3.7	-4.87	31		49.7	66.2	84.7	42.1	56.1	73	94	0.779	3	0.14
Ecuador	5	-7.2	4553	4.34	17.7	40.8	53.6	0.67	62.8	23.86	5.38	5.7	6	0.287	1.70	261.4	106.5	5.5	124.4	372.6	3.1	-5.40	25		24.7	37.1	83.1	20.6	30.8	67	84	0.772	2.1	0.025
El Salvador	5	-4.4	5270	2.72	19	40.6	52.4	0.66	59.8			9	11	0.921	5.28	375.4	166.7	7.9	293.5	1125.9	2	-5.12	27		45.6	60.3	91.3	41.6	55.1			0.735	4	0.33
Grenada	5		8527	4.00				0.66								480	349.4	6.9				-3.81	21							79	95	0.777	3.4	0.48
Guatemala	5	0.0	4133	2.51	13.5	31.9	55.1	0.57	47.2	24.85	3.89	8.6	22	0.9	5.17	256.2	105.1	5.7				-4.21	43		34.2	54.5						0.689	2.8	0.62
Guyana	5	8.1	4568	2.33				0.69	28.2					2.448	13.09	328.9	274.8	5.3				-2.22	63		56.4	44.5	66.5	37.5	29.6	47	54	0.75	2.6	0.59

Haiti	5	3.8	1773	0.47	53.9	78	59.2	0.62	38.8			9	46	2.141	11.60	82.3	31.7	7.6				-1.60	120		48.6	55.1	80.8	39.3	44.5	84	87	0.529	1.6	0.0975
Honduras	5	-6.6	2983	2.95	14.9	35.7	53.8	0.60	46.5			9.1	23	1.536	8.56	197.4	108.3	7.2	191.5	413.9		-2.57	40		56.8	84.7	87.8	49.9	74.4	92	93	0.7	2.5	0.57
Jamaica	5	-2.6	4257	2.93	2	14.4	45.5	0.68	53.1	19.60	8.92	10.3	9	1.527	8.51	223.4	121.3	5.2	57.3	1687.0	2.5		20						82	97	0.736	3.3	0.45
Mexico	5	-4.2	10615	3.81	3	11.6	46.1	0.69	76	37.61	12.38	10.6	5	0.284	1.68	655.4	304	6.5			3.9	-3.50	27		76.1	117.7	77.5	58.9	91.2			0.829	3.5	0.12
Montserrat	5																																
Netherlands Anti	5							0.78	70.4																29.6					70	79			
Nicaragua	5	-5.2	3685	2.98	45.1	79.9	43.1	0.62	59			10.1	27	0.243	1.44	231.3	108.9	8.2			1.8	-3.93	37		58.4	89.3	85.3	49.8	76.2	90	90	0.71	2.6	0.58
Panama	5	0.5	7790	4.02	7.4	18	56.1	0.70	70.8			9.7	23	0.894	5.13	631.6	422.6	7.7	541.3	1068.6	3.2	-2.37	24		108.1	131.8	80.0	86.5	105.4	62	86	0.812	3.2	0.33
Paraguay	5	-0.1	5052	1.60	13.6	29.8	58.4	0.64	58.5	33.41	14.95	4.8	15	0.376	2.21	326.7	110.2	7.7	105.2	312.4	1.4	-3.77	23		54.1	47.7	91.5	49.5	43.6	74	83	0.755	2.4	0.58
Peru	5	-4.5	6249	4.00	10.5	30.6	52	0.68	72.6			6	12	0.566	3.30	235.4	110.5	4.1				-6.97	27		68.2	94.0	91.1	62.1	85.6			0.773	3.5	0.33
Puerto Rico	5	-9.8			2	2		0.78	97.6			10.7													65.2	89.3	75.0	48.9	66.9					0.025
Saint Kitts & Nev	5		16139													709.6	448.2	5.2				-3.81	20		18.8	41.7							0.0975
Saint Lucia	5		6559					0.72	27.6	28.00	10.96					301.6	196.1	5				-2.75	14		48.7	108.2						0.795		0.63
St Vincent & Gre	5							0.71	45.9							417.6	263.9	6.1	27.6	469.6		-1.23	20		35.3									0.67
Suriname	5	4.8	5918	4.11				0.70	73.9					1.936	10.59	376.3	173.1	7.8	102.8	394.7		-1.42	39									0.774	3.5	
Trinidad & Tobag	5	-2.2	15105		12.4	39	38.9	0.78	12.2			11.5	10	2.631	13.95	522.6	203.3	3.5	2613.1	20546.6		-3.57	19		195.1									
Turks & Caicos I	5																													100	100			0.2
Uruguay	5	-1.5	10819	2.36	2	5.7	44.9	0.76	92	36.62	25.83	5.6	2	0.508	2.97	783.7	340.9	8.2			4.5	-3.67	15		57.9	74.8	83.8	48.5	62.6			0.852	6.7	0.025
US Virgin Islands	5							0.76	94.2																						83			
Venezuela	5	-0.7	6606	1.50	18.5	40.1	48.2	0.69	93.4	33.36	27.78	5.4	18	0.721	4.18	284.8	119.6	4.7			2.6	-2.03	21		57.2	70.3	83.0	47.5	58.4	72	74	0.792	2	0.05
Bangladesh	6		2130	5.63	41.3	84	33.4	0.65	25.1	44.51	2.88	5.3	30	0.014	0.08	64.3	18.1	3.1	89.9	103.5	0.5	-4.63	73		87.2	64.6	91.5	79.8	59.1			0.547	2	0.88
Bhutan	6	-5.9	3938	7.64				0.67	11.1					0.036	0.22	93.2	59.8	4.6				-5.12	75		70.5	111.7	90.9	64.1	101.5	100	100	0.579	5	
DPR Korea	6							0.76	61.6	59.54		5.2	33			47	40.2	3.5					55		40.2	97.3	89.2	35.9	86.8	70	86			0.14
India	6	-1.3	3403	6.43	34.3	80.4	36.8	0.67	28.7	30.85	2.80	6.7	20	0.915	5.25	91.4	15.8	5	47.4	45.3		-3.01	74		141.0	63.9	85.6	120.8	54.7	72	77	0.619	3.5	0.74
Indonesia	6		4043	4.42	7.5	52.4	34.3	0.72	48.1	65.27	4.22	2.3	6	0.134	0.80	118.2	40.5	2.8	185.4	162.2	0.7	-6.02	36		102.2	73.0	90.7	92.7	66.2			0.728	2.3	0.72
Maldives	6	-7.0	7290	4.92				0.66	29.6	44.38	9.19					494.4	402.5	7.7	525.7	1418.6		-6.19	42		58.9	87.0	85.7	50.5	74.6	57	78	0.741	3.3	
Myanmar	6		2001	11.40				0.73	30.6	44.96	11.73	3.2	5	1.251	7.06	37.9	4.9	2.2	55.7	26.3	0.8	-1.39	104		51.1	108.8	85.0	43.5	92.5	70	90	0.583	2	0.95
Nepal	6		1804	5.00	24.1	68.53	47.2	0.61	15.8	29.89	22.63	4.2	17	0.53	3.10	71	18.6	5.6			0.3	-4.43	74		69.9	64.2	88.3	61.7	56.7	68	79	0.534	2.5	0.8
Sri Lanka	6	3.0	4889	5.06	5.6	41.6	40.2	0.76	15.1	29.95	2.49	8.4	22	0.04	0.24	162.6	74.1	4.3			1.2	-5.51	14		142.1	84.8	86.3	122.6	73.2	95	99	0.743	3.2	0.67
Thailand	6		8532	5.17	2	25.2	42	0.78	32.3	39.88	3.41	6.9	22	1.349	7.58	293.3	189.7	3.5				-3.84	21		62.1	72.4	74.5	46.3	53.9			0.781	3.3	0.72
Timor-Leste	6		1710					0.55	26.5							142.5	112.5	11.2				-6.12	61		71.3	32.6	82.1	58.5	26.8			0.514	2.6	
American Samoa	6																								60.4	115.4	75.0	45.3	86.6					
Brunei Darussal	6		24181	2.00				0.70	73.5					0.03	0.18	620.9	494.7	3.2				-1.38	9		69.3	140.8	71.3	49.4	100.4		41	0.894		
Cambodia	6		2983	8.65	34.1	77.7	41.7	0.62	19.7	31.73	12.35	5	33	1.054	6.01	139.8	36	6.7	323.0	127.9	1	1.47	143		84.8	60.6	92.6	78.6	56.1	70	77	0.598	2	0.0975
China	6	-3.3	6743	10.18	9.9	34.9	46.9	0.78	40.4	60.80	4.21	4.1	12	0.081	0.48	278.2598	105.665	4.7	120.4	177.1	2.7	-3.57	27		93.6	79.4	94.0	88.0	74.6			0.777	3.5	0.8
China, Hong Kor	6	-4.0	35263	5.79	2	2	43.4	0.85	100			8.2		0.092	0.55										47.8	47.9	76.9	36.7	36.8			0.937	8.3	0.8
China, Macao S/	6	-6.5						0.84	100																68.1	83.6	92.6	63.1	77.5				5.7	0.8
Cook Islands	6									36.47	20.77					435.1	380.2	3.5				-3.03	20		99.3		100.0	99.3	0.0					
Fiji	6	-4.6	5864	4.04				0.67	50.8	24.69	5.13			0.11	0.66	284.3	177.3	4.6				-3.35	18		94.9	88.2	70.6	67.0	62.2			0.762		0.4
French Polynesi	6							0.73	51.7																46.7	78.4	88.9	41.5	69.7					
Guam	6							0.71	94																61.4	73.2	85.2	52.3	62.4					0.025
Kiribati	6		2462	3.06												270.5	251.5	13.7	1879.9	562.5		-2.06	65		69.1	82.3	92.7	64.0	76.2		51		3.3	
Lao PDR	6		2134	5.86	27	74.1	34.6	0.60	20.6			3.1	19	0.121	0.72	73.7	15.1	3.9	171.9	269.6		-4.71	79		68.8	76.7	90.1	62.0	69.1	98	99	0.601	1.9	
Malaysia	6	-0.7	11105	4.35	2	9.3	49.2	0.69	67.3	55.49	2.53	10.7	3	0.472	2.77	402.3	236.6	3.8			2.4	-4.09	12		107.3	78.1	70.1	75.2	54.8			0.811	5.1	0.025
Marshall Islands	6															555.2	538.8	15.2				-3.07	58		43.3	78.6	87.2	37.8	68.5					
Micronesia	6	-0.9						0.68								291.7	250	7.6				0.19	42		58.3	81.6	80.0	46.6	65.3	63	62			0.12
Mongolia	6		2216	5.20	10.8	44.6	32.8	0.71	56.7	44.64	5.30	1.9	27	0.03	0.18	140.9	93.8	6	972.4	557.3	6	-5.17	49		101.4	96.2	87.7	88.9	84.3			0.7	3	0.51
Nauru	6									47.22	53.29					399.3	291.6	8.1					30		90.4	41.5	66.7	60.3	27.7					
New Caledonia	6	-10.0						0.73	63.7																97.0	36.3	93.8	91.0	34.0					
Niue	6															245.3	242.4	15.1					38		74.4									
Northern Marian	6																								95.2	54.4								
Palau	6									38.83	10.10					841	766.9	9.7				-4.81	11			129.0	100.0		129.0	39	39			
Papua New Guir	6		2582	0.35			50.9	0.59	13.4			2.9		1.761	9.71	146.7	123.7	3.6			0.6	-1.41	74		83.2	21.5	71.1	59.2	15.3	87	85	0.53	2	0.9
Philippines	6	-4.4	5016	4.16	14.8	43	44.5	0.64	62.7	40.71	9.06	7.6	18	0.025	0.15	202.8	80.7	3.4	164.8	99.8	7.4	-4.16	33		116.1	76.5	89.4	103.8	68.4		92	0.771	2.5	0.47
Rep. Korea	6	1.6	22208	6.40	2	2	31.6	0.81	80.8	53.77	5.64	7.8	2	0.041	1.22	1149.3	591	5.6	123.1	153.8	5.4	-2.80	6		80.7	15.9	82.6	66.7	13.1			0.921		0.025
Samoa	6	-2.1	6205	4.58				0.59	22.4	57.66	23.77					217.7	167.1	5.3				-3.58	29		57.5	80.4	90.9	52.2	73.1			0.785	4.5	0.7
Solomon Islands	6	-0.2	1974	-1.43				0.68	17							114	107.7	5.9				-3.21	29		64.0	42.1	85.2	54.5	35.8			0.602	2.8	0.95
Tokelau	6							0.63																	110.4									
Tonga	6	-5.3	7891	4.63					24	61.05	15.65					315.9	251.3	6.3				-1.83	24		55.9	127.2	72.7	40.6	92.5			0.819	1.7	0.56
Tuvalu	6															257.1	243.7	16.6				-1.72	38			28.8	100.0		28.8					
Vanuatu	6	-9.2	3208	0.09				0.60	23.5	51.89	8.03					123.2	94.7	4.1				-3.14	38		73.6	72.7	81.0	59.6	58.9	65	85	0.674	3.1	0.79
Viet Nam	6	0.5	3078	7.57			34.4	0.70	26.4	44.42	2.12	2.9	16	0.51	2.98	184.1	49.8	5.5	206.3	183.0	1.3	-6.24	19		29.1	84.1	92.3	26.9	77.6			0.733	2.6	0.7
Wallis & Futuna	6																								98.1									0.7
Number of country observations in each region																																	
AFR		28	48	48	29	29	32	47	47	28	28	43	42	46	46	48	48	48	23	23	20	43	49	0	43	42	41	41	41	35	43	46	48	44
CEEUR		25	27	28	22	22	24	28	28	23	23	24	24	21	21	28	28	28	10	10	25	27	27	0	25	24	26	23	24	17	22	27	27	27
HI		26	27	27	27	27	24	28	27	27	27	24	23	25	25	30	30	30	3	3	23	29	30	19	27	17	14	14	14	21	20	27	27	29
EMR		12	17	17	9	9	7	18	18	13	12	15	13	12	12	18	18	18	10	10	13	17	17	0	19	19	19	19	19	14	12	16	18	19
LAC		25	31	26	22	22	21	33	32	16	16	23	22	27	27	33	33	33	12	12	16	31	33	0	31	26	23	23	23	19	22	29	27	34
SEAWPR		18	27	26	14	14	16	32	31	23	22	18	16	20	20	34	34	34	13	13	13	31	34	0	41	39	39	37	39	13	16	26	25	26
Total		134	177	172	123	123	124	186	183	130	128	147	140	151	151	191	191	191	71	71	110	178	190	19	186	167	162	157	160	119	135	171	172	179

Appendix B. Independent variable (col F) and 32 expplanatory variables (transformed data)

Country	Subregion code	GDP 2005	change GDP %/yr	Poverty % below 1$/day	Poverty % below 2$/day	Gini index	Prop pop 15+	Urban (%)	Prevalence smoking M	Prevalence smoking F	Prevalence DM %	Prevalence undernutrition %	Adult HIV prev %	HIV prev in adult incident TB cases %	Per capita total expenditure on health $PPP 2004	Per capita government expenditure on health $PPP 2004	Total exp. health as % GDP	TBexpenditure/cap	TBexpenditure/case	Health workers/1000 population	Change USM %/yr 1990-2005	USM 2005	ForeignTB %	Detection all new cases %	Detection new ss+ cases %/yr	Treatment success %	Detection all new * treat success	Detection ss+ * treat success	Improved water supply %	Improved sanitation %	Human Dev Index 2005	Corruption Perception Index	Solid fuel use
Botswana	1	4.18	7.95	0.28	0.59	0.65	0.01	0.61			0.05	0.33	0.28	0.77	2.70	2.50	0.06				5.03	2.08		0.93	0.91	0.77	0.59	0.58	0.39	0.66	0.007	0.054	0.0051
Burkina Faso	1	3.12	4.85	0.28	0.80	0.41	0.01	0.18	0.20	0.08	0.04	0.15	0.02	0.11	1.88	1.62	0.06	2.04	2.62	0.30	-0.63	2.28		0.11	0.17	0.80	0.08	0.12	0.76	0.91	0.004	0.029	0.0010
Burundi	1	2.80	1.44	0.58	1.07	0.44	0.01	0.10			0.02	0.72	0.03	0.17	1.21	0.62	0.03	2.27	2.33	0.30		2.28		0.23	0.27	0.90	0.18	0.21	0.52	0.72	0.004	0.025	0.0010
Cameroon	1	3.32	3.17	0.17	0.53	0.46	0.01	0.58	0.13	0.03	0.04	0.26	0.05	0.26	1.92	1.36	0.05	2.58	2.46		0.48	2.17		0.89		0.83	0.61	0.89	0.55	0.85	0.005	0.024	0.0083
Central African Rep	1	3.06	0.43	0.73	1.00	0.66	0.01	0.39			0.04	0.46	0.11	0.43	1.73	1.30	0.04	1.88	1.98		0.97	2.29		0.47	0.92	0.71	0.30	0.54	0.19	0.43	0.004	0.020	0.0010
Chad	1	3.25	8.35				0.01	0.26	0.14	0.02	0.04	0.36	0.04	0.18	1.62	1.19	0.04	1.85	2.04	0.20	0.04	2.32								0.62	0.004	0.018	0.0010
Congo	1	3.13	3.12				0.01	0.65	0.12	0.01	0.05	0.34	0.05	0.25	1.48	1.17	0.03				-0.13	2.03		0.69	0.63	0.29	0.18	0.17	0.76	1.00	0.005	0.021	0.0084
Côte d'Ivoire	1	3.22	0.40	0.15	0.51	0.46	0.01	0.47	0.15	0.02	0.05	0.13	0.05	0.24	1.80	1.18	0.04	2.31	2.28		1.51	2.29		0.29	0.44	0.85	0.22	0.33	0.44	0.48	0.004	0.021	0.0074
DR Congo	1	2.90	0.97				0.01	0.33	0.14	0.02	0.03	0.83	0.03	0.17	1.18	0.63	0.04	2.12	1.90			2.31		0.46	0.78	1.01	0.39	0.64			0.004	0.019	0.0014
Equatorial Guinea	1	4.31	19.68				0.01	0.40					0.03	0.17	2.35	2.24	0.02				1.29	2.31							0.23	0.22	0.006	0.019	
Ethiopia	1	3.00	3.62	0.23	0.89	0.30	0.01	0.16	0.06	0.01	0.02	0.48	0.02	0.11	1.32	1.04	0.05	1.78	1.58	0.20	-1.45	2.21		0.47	0.32	0.89	0.36	0.25		1.08	0.004	0.024	0.0010
Gabon	1	3.86	-0.06				0.01	0.99			0.05	0.05	0.08	0.35	2.42	2.26	0.05				-0.08	1.96		0.69	0.62	0.48	0.30	0.27	0.47	0.66	0.007	0.033	0.0028
Kenya	1	3.10	3.05	0.23	0.62	0.44	0.01	0.21	0.24	0.02	0.03	0.32	0.06	0.28	1.93	1.56	0.04	2.37	1.89		1.48	2.08		1.15	0.90	0.97	0.85	0.70		0.91	0.005	0.021	0.0081
Lesotho	1	3.33	2.19	0.37	0.60	0.68	0.01	0.19			0.04	0.13	0.23	0.70	2.14	2.07	0.07				-0.84	2.12		1.13	0.90			0.58	0.66	0.005	0.033	0.0083
Liberia	1	2.99	5.89				0.01	0.62			0.05	0.52	0.03	0.17	1.35	1.15	0.06	2.30	2.28			2.37		0.44	0.69	0.86	0.33	0.50	0.41	0.82		0.021	
Malawi	1	2.81	1.69	0.21	0.68	0.40	0.01	0.17	0.19	0.04	0.02	0.36	0.14	0.52	1.76	1.64	0.13			0.30	-3.40	2.10		0.49	0.39	0.82	0.35	0.28	0.37	0.44	0.004	0.027	0.0010
Mozambique	1	3.14	7.87	0.37	0.83	0.49	0.01	0.35	0.22	0.03	0.04	0.46	0.15	0.53	1.62	1.46	0.04	2.40	2.18	0.30	-3.12	2.16		0.38	0.50	0.92	0.30	0.39	0.61	1.06	0.004	0.028	0.0080
Namibia	1	3.90	4.58	0.36	0.59	0.84	0.01	0.36	0.31	0.09	0.04	0.24	0.18	0.60	2.61	2.45	0.07	2.79	1.93		-2.18	1.79			1.25	0.84	0.85	0.79	0.51	0.50	0.007	0.045	0.0095
Nigeria	1	3.06	4.16	0.79	1.18	0.45	0.01	0.50	0.12	0.01	0.05	0.09	0.04	0.20	1.72	1.21	0.05	1.83	2.15	1.50	-1.12	2.29		0.18	0.24	0.85	0.13	0.18	0.63	0.83	0.005	0.022	0.0067
Rwanda	1	3.13	3.67	0.65	1.07	0.49	0.01	0.19			0.02	0.34	0.03	0.16	2.10	1.85	0.08			0.20	1.11	2.31		0.24	0.30	0.98	0.20	0.25	0.98	1.08	0.005	0.028	0.0010
South Africa	1	4.08	4.41	0.11	0.35	0.62		0.63	0.27	0.09	0.04	0.02	0.19	0.62	2.87	2.48	0.09	2.94	2.18	4.60	0.81	1.83		0.66	0.81	0.79	0.45	0.54		0.67	0.007	0.051	0.0018
Swaziland	1	3.71	2.59	0.50	0.89	0.53	0.01	0.24	0.12	0.02	0.04	0.22	0.34	0.85	2.56	2.37	0.06			3.40	2.53	2.20		0.65	0.50	0.44	0.26	0.21	0.46	0.64	0.005	0.033	
Uganda	1	3.19	4.38			0.47	0.01	0.13	0.17	0.02	0.02	0.19	0.07	0.30	2.13	1.65	0.08	1.76	1.60	0.10	-1.06	2.13		0.38	0.46	0.82	0.27	0.33	0.48	0.67	0.005	0.028	0.0010
UR Tanzania	1	2.87	5.65	0.62	1.12	0.35	0.01	0.24	0.21	0.03	0.03	0.46	0.06	0.30	1.45	1.09	0.04	2.14	1.94	0.40	-1.78	2.09		0.49	0.49	0.96	0.39	0.39	0.52	0.62	0.005	0.032	0.0003
Zambia	1	3.01	4.03	0.69	1.06	0.53	0.01	0.36	0.17	0.03	0.04	0.48	0.17	0.58	1.80	1.54	0.06				0.08	2.26		0.79	0.55	1.00	0.64	0.46	0.89	0.94	0.004	0.027	0.0085
Zimbabwe	1	3.40	-3.19	0.60	0.98	0.52	0.01	0.37	0.21	0.03	0.04	0.49	0.20	0.65	2.14	1.81	0.08			0.60	1.80	1.93		0.62	0.43	0.74	0.41	0.29	1.22	1.02	0.005	0.021	0.0073
Algeria	1	3.87	4.93	0.02	0.15	0.36	0.01	0.69	0.32	0.00	0.08	0.04	0.00	0.01	2.22	2.08	0.04				-3.78	1.59				1.05	1.27	1.08	0.37	0.56	0.007	0.030	0.0003
Angola	1	3.47	6.87				0.01	0.56			0.03	0.36	0.04	0.19	1.57	1.47	0.02					2.41		0.91	0.91	0.81	0.61	0.61	0.68	0.73	0.004	0.022	0.0010
Benin	1	3.13	3.42	0.31	0.83	0.37	0.01	0.41			0.04	0.12	0.02	0.10	1.61	1.32	0.05	2.07	2.48		-1.39	2.18		0.46	0.99	1.05	0.39	0.81			0.004	0.027	0.0095
Cape Verde	1	3.83	6.29				0.01	0.61							2.35	2.23	0.05				-3.55	1.54		0.29	0.34	0.70	0.19	0.22			0.007	0.049	0.0036
Comoros	1	3.30	2.32				0.01	0.38	0.23	0.10			0.00	0.00	1.40	1.15	0.03				-3.59	1.85		0.31	0.43	1.15	0.28	0.39			0.006	0.026	0.0076
Djibouti	1	3.38	2.55				0.01	1.04					0.03	0.16	1.94	1.78	0.06				-1.56	2.12		0.46	0.42	0.92	0.36	0.33	0.44	0.64	0.005	0.029	0.0006
Eritrea	1	2.99	0.79				0.01	0.20	0.16	0.01	0.02	0.85	0.02	0.13	1.44	1.03	0.05				-4.11	1.89		0.73	0.35	1.08	0.63	0.31		0.96	0.005	0.028	0.0080
Gambia	1	3.31	3.60	0.63	0.98	0.53	0.01	0.57	0.28	0.02	0.04	0.29	0.02	0.13	1.94	1.37	0.07				-1.17	2.14		0.45	0.72	0.51	0.21	0.33	0.58	0.85	0.005	0.023	0.0028
Ghana	1	3.42	4.40	0.46	0.90	0.42	0.01	0.50	0.08	0.01	0.04	0.11	0.02	0.12	1.98	1.60	0.07	1.76	2.02	0.90	-0.59	2.05		0.26	0.39	0.81	0.19	0.28	0.46	0.52	0.006	0.037	0.0088
Guinea	1	3.37	2.50			0.40	0.01	0.34			0.04	0.24	0.02	0.08	1.98	1.10	0.05			0.60	-3.08	2.18							0.63	0.005	0.019	0.0010
Guinea-Bissau	1	2.87	-2.63			0.49	0.01	0.30			0.04	0.40	0.04	0.19	1.45	0.89	0.05				-1.56	2.30		0.62	0.73	0.76	0.41	0.48	0.41	0.48	0.004	0.022	
Madagascar	1	2.97	2.01	0.66	1.02	0.49	0.01	0.27			0.03	0.39	0.01	0.03	1.46	1.23	0.03	1.71	1.70	0.40	-2.24	2.08		0.45	0.82	0.84	0.33	0.58	0.35	0.52	0.005	0.032	0.0010
Mali	1	3.09	4.68	0.37	0.81	0.41	0.01	0.31	0.19	0.02	0.04	0.29	0.02	0.10	1.73	1.42	0.07	1.84	2.30	0.20	-0.93	2.34		0.14	0.26	0.85	0.11	0.19	0.39	0.56	0.004	0.027	0.0010
Mauritania	1	3.35	4.05	0.26	0.68	0.40	0.01	0.42	0.23	0.04	0.05	0.10	0.01	0.04	1.63	1.47	0.03				-0.43	2.10		0.27	0.37	0.58	0.15	0.20	1.57	1.57	0.006	0.026	0.0065
Mauritius	1	4.10	5.31				0.01	0.44	0.37	0.01	0.11	0.05	0.01	0.03	2.71	2.45	0.04				-2.89	1.18		0.15	0.25	1.04	0.13	0.22	0.40	0.48	0.008	0.047	0.0003
Niger	1	2.96	2.40	0.65	1.03	0.53	0.01	0.17			0.04	0.33	0.01	0.06	1.41	1.13	0.04			0.30	-1.49	2.41									0.004	0.026	0.0010
Sao Tome & Princi	1	3.20	3.77				0.01								2.15	2.09	0.12					2.07		1.28					0.71	0.86			0.0095
Senegal	1	3.28	4.19	0.17	0.60	0.43	0.01	0.43	0.20	0.01	0.05	0.20	0.01	0.05	1.86	1.46	0.06	1.97	2.04		-0.56	2.13									0.005	0.036	0.0041
Seychelles	1	4.26	0.57				0.01		0.36	0.07					2.80	2.68	0.06	3.20	3.96		-2.35	1.11								0.61	0.008	0.045	0.0003
Sierra Leone	1	2.92	8.59	0.61	0.84	0.68	0.01	0.42			0.04	0.54	0.02	0.09	1.53	1.30	0.03				-0.46	2.45		0.27	0.36	1.03	0.23	0.30		0.29	0.003	0.021	0.0092
Somalia	1							0.36			0.03		0.01	0.05								2.35		0.66	0.98	1.09	0.58	0.83	0.69	0.78		0.020	
Sudan	1	3.39	5.82				0.01	0.42			0.04	0.26	0.02	0.09	1.73	1.28	0.04	1.93	2.05	1.00	-1.93	1.95		0.31	0.32	0.96	0.26	0.26	0.52	0.55	0.005	0.018	0.0010
Togo	1	3.18	1.08				0.01	0.41			0.04	0.24	0.03	0.17	1.80	1.11	0.06			0.30	-0.59	2.14		0.11	0.20	0.79	0.08	0.14	1.29	1.29	0.005	0.023	0.0076
Albania	2	3.72	8.10	0.02	0.10	0.32	0.01	0.47	0.41	0.04	0.05	0.06			2.53	2.17	0.07			5.40	-5.94	1.26		0.90	0.38	0.88	0.64	0.29	1.33	1.33	0.008	0.029	0.0050
Bosnia & Herzegov	2	3.90	7.44			0.27	0.01	0.47	0.51	0.33	0.07	0.09			2.78	2.47	0.08			5.70	-2.60	1.18		1.00	0.67	1.31	0.95	0.65	1.57	1.57	0.008	0.033	0.0025
Croatia	2	4.13	6.20	0.02	0.02	0.29	0.01	0.60	0.38	0.26	0.07	0.07			2.96	2.87	0.08			7.70	-3.64	0.85		0.60							0.009	0.041	
Cyprus	2	4.44	4.22				0.01	0.77							3.05	2.70	0.06				-5.85	0.70			0.53	0.68	0.69	0.32	1.43	1.43	0.009	0.053	0.0003
Hungary	2	4.26	6.78	0.02	0.02	0.27	0.01	0.72	0.46	0.31	0.08	0.02	0.00	0.00	3.12	2.97	0.08			11.90	-5.03	0.90		0.97	0.52	0.47	0.38	0.22			0.009	0.053	0.0003
Poland	2	4.14	5.76	0.02	0.02	0.35	0.01	0.67	0.46	0.26	0.08	0.02	0.00	0.01	2.91	2.75	0.06			7.70	-5.44	0.90		0.94	0.73	0.88	0.67	0.54	1.19	1.19	0.009	0.042	0.0003
Serbia & Monteneg	2		7.96				0.01	0.55	0.43	0.42			0.00	0.01	2.64	2.50	0.10							0.63		0.99	0.51		1.57	1.57		0.034	0.0041
Slovakia	2	4.20	5.99				0.01	0.60	0.43	0.19			0.00	0.00	3.03	2.89	0.07			10.60	-3.34	0.95			0.44	1.18		0.41			0.009	0.049	0.0003
Slovenia	2	4.35	5.68	0.02	0.02	0.29	0.01	0.54	0.30	0.20	0.08	0.03	0.00	0.00	3.26	3.14	0.09			9.40	-6.08	0.60			0.79	1.00		0.64			0.009	0.066	0.0003
TFYR Macedonia	2	3.86	4.00				0.01	0.76					0.00	0.00	2.67	2.52	0.08			8.10	-5.96	1.23		1.17	0.73	1.00	0.89	0.60	1.02	1.29	0.008		0.0075
Turkey	2	3.93	3.78	0.03	0.19	0.45	0.01	0.74	0.56	0.21	0.08	0.03			2.75	2.60	0.00	2.76	3.33	4.20	-6.60	1.46		0.40	0.93	1.11	0.35	0.80		1.17	0.008	0.041	0.0011
Armenia	2	3.65	13.60	0.02	0.32	0.34	0.01	0.70	0.56	0.04	0.08	0.24	0.00	0.01	2.35	1.77	0.05			8.80	-4.59	1.46		0.80	0.62	0.81	0.55	0.43	0.75	0.88	0.008	0.030	0.0026
Azerbaijan	2	3.68	11.60	0.04	0.34	0.37	0.01	0.54			0.07	0.07	0.00	0.01	2.14	1.54	0.04			12.00	-1.10	1.95		0.73	0.51	0.68	0.43	0.31	1.57	1.57	0.007	0.021	0.0049
Belarus	2	3.90	9.14	0.02	0.02	0.30	0.01	0.81	0.69	0.18	0.08	0.04	0.00	0.02	2.63	2.50	0.06			17.50	-3.12	0.95		1.03	0.41	0.82	0.68	0.30	1.43	1.43	0.008	0.021	0.0019
Bulgaria	2	3.95	7.46	0.02	0.06	0.30	0.01	0.78	0.46	0.22	0.08	0.08			2.83	2.59	0.08	2.73	3.11	8.30	-1.24	1.18		1.33	1.21	1.03	0.99	0.93	1.57	1.57	0.008	0.041	0.0017
Estonia	2	4.21	9.16	0.02	0.08	0.37	0.01	0.76	0.51	0.26	0.08	0.02	0.01	0.07	2.88	2.76	0.05	3.82	4.27	9.80	-5.11	0.85		0.80	0.69	0.80	0.54	0.47	0.93	0.96	0.009	0.065	0.0015
Georgia	2	3.51	8.38	0.07	0.26	0.42	0.01	0.55	0.59	0.06	0.07	0.09	0.00	0.01	2.23	1.67	0.05	2.97	2.96	7.90	-0.30	1.65				0.81	0.97	0.89	1.06	1.04	0.008	0.034	0.0042
Kazakhstan	2	3.92	10.51	0.02	0.16	0.35	0.01	0.61	0.45	0.10	0.06	0.06	0.00	0.02	2.42	2.20	0.04			9.50	-2.15	1.49			0.76	0.79	0.84	0.51	0.89	0.88	0.008	0.021	0.0005
Kyrgyzstan	2	3.30	5.11	0.02	0.22	0.31	0.01	0.37	0.47	0.02	0.05	0.04	0.00	0.01	2.01	1.62	0.06			10.10	-1.17	1.83		1.09	0.68	1.01	0.85	0.56	1.43	1.43	0.007	0.021	0.0076
Latvia	2	4.13	10.09	0.02	0.05	0.39	0.01	0.75	0.56	0.19	0.08	0.03	0.01	0.05	2.93	2.68	0.07	3.75	3.97	8.20	-3.67	1.00		1.06	1.02	0.83	0.70	0.67		0.009	0.048	0.0010
Lithuania	2	4.16	8.68	0.02	0.08	0.37	0.01	0.73	0.46	0.18	0.08	0.02	0.00	0.01	2.93	2.80	0.07			12.40	-2.17	0.95		1.52		0.78	0.77	0.87		1.17	0.009	0.048	0.0003
Republic of Moldov	2	3.42	7.20	0.02	0.21	0.34	0.01	0.49	0.48	0.05	0.08	0.11	0.01	0.06	2.14	1.89	0.07	3.22	3.13	9.20	-4.41	1.20		0.92		0.67	0.52			0.61	0.007	0.028	0.0063
Romania	2	3.96	6.50	0.02	0.13	0.32	0.01	0.57	0.47	0.24	0.08	0.02			2.64	2.46	0.05	2.82	2.74	6.20	-3.16	1.28		0.85	0.92	0.96	0.66	0.71	1.22	1.33	0.008	0.037	0.0023
Russian Federation	2	4.04	8.40	0.02	0.12	0.41	0.01	0.82	0.78	0.23	0.08	0.03	0.01	0.06	2.77	2.55	0.06	3.29	3.34	12.50	-2.31	1.15		0.78	0.38	0.61	0.42	0.21		0.63	0.008	0.023	0.0007

Tajikistan	2	3.13	9.72	0.07	0.44	0.33	0.01	0.25			0.05	0.59	0.00	0.01	1.73	1.06	0.04	2.63	2.70	7.20	-2.43	1.85		1.08	0.33	1.04	0.86	0.29		0.80	0.007	0.021	0.0075
Turkmenistan	2	3.89	15.19			0.42	0.01	0.48			0.05	0.07	0.00	0.00	2.39	2.23	0.05				0.45	2.02		1.10	0.62	0.95	0.81	0.49	1.29	1.29	0.007	0.020	0.0020
Ukraine	2	3.85	9.07	0.02	0.05	0.28	0.01	0.75	0.69	0.19	0.08	0.02	0.01	0.08	2.63	2.38	0.07			11.20	-2.67	1.23		1.02					1.22	0.96	0.008	0.027	0.0006
Uzbekistan	2	3.32	5.72	0.02	0.02	0.38	0.01	0.38	0.24	0.01	0.05	0.25	0.00	0.01	2.20	1.87	0.05	2.70	2.80	13.70	-0.98	1.83			0.50	0.94		0.40			0.007	0.021	0.0072
Andorra	3								0.37	0.25					3.55	3.39	0.07					0.78		1.20		0.93	0.84		1.57	1.57			0.0003
Australia	3	4.50	4.32	0.00	0.00	0.36	0.01	1.08	0.27	0.20	0.05	0.02	0.00	0.03	3.49	3.32	0.10			10.80	-3.30	0.78		0.61	0.41	0.93	0.48	0.33	1.57	1.57	0.010	0.086	0.0003
Austria	3	4.53	3.75	0.00	0.00	0.30	0.01	0.72	0.47	0.37	0.08	0.02	0.00	0.08	3.51	3.36	0.10			9.30	-4.66	0.70	0.46	1.13	0.53	0.85	0.75	0.39	1.57	1.57	0.009	0.081	0.0003
Belgium	3	4.52	3.76	0.00	0.00	0.34	0.01	1.33	0.29	0.22	0.05	0.02	0.00	0.08	3.50	3.35	0.10			15.60	-4.66	0.70	0.54	0.85	0.59	0.73	0.52	0.38	1.57	1.57	0.009	0.071	0.0003
Canada	3	4.53	4.42	0.02	0.00	0.33	0.01	0.93	0.24	0.18	0.07	0.02	0.00	0.08	3.50	3.35	0.10			12.20	-1.97	0.78		0.60	0.37	0.40	0.22	0.14	1.57	1.57	0.010	0.087	0.0003
Czech Republic	3	4.33	5.40	0.00	0.02	0.26	0.01	0.83	0.37	0.24	0.08	0.02	0.00	0.01	3.15	3.10	0.07			13.40	-7.18	0.60	0.13	1.21	0.60	0.80	0.74	0.42	1.57	1.57	0.009	0.052	0.0003
Denmark	3	4.54	3.64	0.00	0.00	0.25	0.01	1.03	0.37	0.30	0.06	0.02	0.00	0.06	3.44	3.36	0.09			13.60	-3.96	0.70	0.66	1.02	0.75				1.57	1.57	0.009	0.094	0.0003
Finland	3	4.51	5.01	0.00	0.00	0.27	0.01	0.66	0.31	0.21	0.06	0.02	0.00	0.02	3.34	3.23	0.07			25.60	-3.80	0.60	0.10	1.35					1.57	1.57	0.010	0.094	0.0003
France	3	4.47	3.65	0.00	0.00	0.33	0.01	0.87	0.35	0.23	0.06	0.02	0.00	0.11	3.48	3.38	0.11			10.20	-3.99	0.70	0.47	0.67					1.57	1.57	0.010	0.073	0.0003
Germany	3	4.47	3.32	0.00	0.00	0.29	0.01	0.85	0.37	0.22	0.08	0.02	0.00	0.03	3.50	3.39	0.11			13.20	-3.99	0.70	0.44	1.13							0.009	0.078	0.0003
Greece	3	4.39	6.02	0.00	0.00	0.35	0.01	0.63	0.67	0.33	0.06	0.02	0.00	0.05	3.34	3.06	0.08			7.50	-5.26	0.70		0.33							0.009	0.046	0.0003
Iceland	3	4.58	4.85	0.00	0.00		0.01	1.19	0.26	0.25			0.00	0.06	3.52	3.44	0.10	1.72	3.19		-4.69	0.48			0.79	1.57		0.79			0.010	0.092	0.0003
Ireland	3	4.62	6.83	0.00	0.00	0.35	0.01	0.65	0.25	0.24	0.05	0.02	0.00	0.06	3.42	3.32	0.07			19.00	-4.10	0.70	0.32	0.84					1.57	1.57	0.010	0.075	0.0003
Israel	3	4.46	2.96	0.00	0.00	0.40	0.01	1.16	0.31	0.18	0.07	0.02			3.29	3.14	0.09			10.30	-5.31	0.70		0.84	0.32						0.009	0.061	0.0003
Italy	3	4.47	3.17	0.00	0.00	0.37	0.01	0.74	0.31	0.17	0.06	0.02	0.01	0.13	3.38	3.26	0.09			10.50	-4.79	0.60	0.46						1.57	1.57	0.009	0.052	0.0003
Japan	3	4.49	3.30	0.00	0.00	0.25	0.01	0.72	0.48	0.14	0.05	0.02	0.00	0.01	3.36	3.27	0.08			10.40	-2.73	0.60		1.40	0.68	0.64	0.63	0.38			0.010	0.075	0.0003
Luxembourg	3	4.88	5.68	0.00	0.00		0.01	0.98	0.38	0.28			0.00	0.06	3.71	3.67	0.08				-4.16	0.70	0.75	0.69	0.04							0.009	0.084	0.0003
Malta	3	4.29	3.09				0.01	1.26	0.33	0.22			0.00	0.04	3.24	3.12	0.09				-4.09	0.78	0.83		0.41	1.57		0.41				0.009	0.058	0.0003
Monaco	3			0.00	0.00										3.68	3.56	0.10				-5.43	0.60							1.57	1.57				0.0003
Netherlands	3	4.52	3.47	0.00	0.00	0.31	0.01	0.93	0.39	0.29	0.05	0.02	0.00	0.06	3.49	3.29	0.09	3.44	4.60	16.70	-3.96	0.70	0.72	1.06					1.33		0.010	0.090	0.0003
New Zealand	3	4.39	4.43	0.00	0.00	0.37	0.01	1.04	0.26	0.25	0.06	0.02			3.32	3.21	0.08			10.90	-4.06	0.78			0.27	1.03	1.29	0.23	1.57	1.57	0.009	0.094	0.0003
Norway	3	4.62	3.79	0.00	0.00	0.26	0.01	0.89	0.33	0.29	0.04	0.02	0.00	0.03	3.61	3.53	0.10			24.90	-5.43	0.60	0.89		0.44	1.16		0.40			0.010	0.087	0.0003
Portugal	3	4.34	3.05	0.00	0.00	0.40	0.01	0.61	0.40	0.25	0.06	0.02	0.00	0.11	3.28	3.13	0.10			7.00	-6.81	0.70	0.12	1.14	1.05	1.10	0.94	0.88			0.009	0.065	0.0003
San Marino	3						0.01								3.50	3.40	0.07				-9.23	0.48							1.57	1.57				0.0003
Singapore	3	4.48	5.16	0.00	0.00	0.44	0.01	1.57			0.10		0.00	0.08	3.05	2.58	0.04			5.60	-7.28	0.48		0.83		0.97	0.65	1.07	1.57	1.57	0.009	0.093	0.0003
Spain	3	4.42	4.55	0.00	0.00	0.35	0.01	0.87	0.37	0.28	0.06	0.02	0.01	0.16	3.32	3.17	0.08			6.80	-3.96	0.70	0.19	0.86					1.57	1.57	0.009	0.067	0.0003
Sweden	3	4.51	4.70	0.00	0.00	0.25	0.01	1.00	0.20	0.23	0.05	0.02	0.00	0.05	3.45	3.38	0.09			13.50	-3.80	0.60	0.82	0.89					1.57	1.57	0.010	0.093	0.0003
Switzerland	3	4.55	3.39	0.00	0.00	0.34	0.01	0.85	0.30	0.20	0.08	0.02	0.00	0.11	3.60	3.37	0.12	1.74	2.90	12.10	-3.96	0.70	0.64	0.69					1.57	1.57	0.010	0.090	0.0003
United Kingdom	3	4.52	4.49	0.00	0.00	0.37	0.01	1.11	0.35	0.32	0.03	0.02	0.00	0.07	3.41	3.34	0.08				-3.48	0.78	0.69	1.39					1.57	1.57	0.009	0.084	0.0003
USA	3	4.61	3.94	0.00	0.00	0.42	0.01	0.94	0.26	0.20	0.08	0.02	0.01	0.15	3.79	3.44	0.15			13.20	-2.16	0.90	0.58		1.06	0.69	0.73	0.59	0.04	0.40	0.010	0.072	
Afghanistan	4	3.12	11.34				0.01	0.23					0.00	0.00	1.28	0.51	0.04	1.81	1.95	0.40	-0.08	2.41		0.61	0.71	1.11	0.54	0.62				0.018	0.0010
Bahrain	4	4.34	5.63				0.01	1.31	0.27	0.03			0.00	0.01	2.94	2.77	0.04				-3.70	1.04		1.21	0.10	1.20	1.06	0.10	1.22	1.37	0.009	0.050	0.0003
Egypt	4	3.66	4.50	0.03	0.45	0.35	0.01	0.44	0.26	0.04	0.11	0.04	0.00	0.00	2.41	1.99	0.06			4.90	-7.34	1.52		0.55	0.61	0.90	0.42	0.47	1.17	1.22	0.007	0.029	0.0003
Iran	4	3.91	5.68	0.02	0.07	0.44	0.01	0.73	0.26	0.05	0.08	0.04	0.00	0.01	2.78	2.46	0.07				-4.50	1.56		0.62	0.75	0.97	0.50	0.60	0.98	0.94	0.008	0.029	0.0072
Iraq	4						0.01	0.73	0.26	0.02	0.10		0.00	0.00	2.13	2.03	0.05	2.07	2.55	3.60				0.48	0.41	1.03	0.41	0.35	1.33	1.33		0.015	0.0003
Jordan	4	3.72	5.30	0.02	0.07	0.40	0.01	0.97	0.67	0.08	0.10	0.06	0.00	0.00	2.70	2.39	0.10	2.24	3.43	4.80	-2.80	1.41			0.86	0.97	1.28	0.67			0.008	0.047	0.0003
Kuwait	4	4.28	3.47				0.01	1.39			0.14	0.05			2.73	2.62	0.03	3.18	3.90	5.40	-1.99	1.08		1.41	1.32	0.68	0.67	0.66	1.57	1.57	0.009	0.043	0.0003
Lebanon	4	3.74	3.36				0.01	1.05	0.29	0.07	0.08	0.03	0.00	0.01	2.91	2.35	0.12	2.03	3.00	4.40	-1.33	1.48		0.95	0.58	1.16	0.84	0.53	0.79		0.008	0.030	0.0003
Libyan Arab Jamah	4	4.06	3.94				0.01	1.01			0.04	0.02	0.00	0.02	2.52	2.39	0.04				-5.02	1.28				0.76			0.85	0.94	0.008	0.025	0.0003
Morocco	4	3.66	4.72	0.02	0.14	0.41	0.01	0.63	0.30	0.00	0.08	0.06	0.00	0.01	2.37	1.90	0.05	1.88	1.96	1.50	-5.13	1.60		1.14	1.25	0.95	0.83	0.88	0.93		0.006	0.035	0.0005
Oman	4	4.24	4.46	0.02	0.02		0.01	0.80	0.25	0.01	0.13		0.00	0.01	2.62	2.53	0.03			4.20	-6.31	1.08		1.46	0.90	1.13	1.12	0.78	0.98	1.14	0.008	0.047	0.0003
Pakistan	4	3.40	4.58	0.17	0.83	0.31	0.01	0.36	0.32	0.05	0.10	0.24	0.00	0.01	1.68	0.97	0.02	1.08	1.14	1.10	-1.76	2.00		0.64	0.52	0.99	0.52	0.43			0.006	0.024	0.0072
Qatar	4	4.50	4.00				0.01	1.27							2.84	2.72	0.02				-4.65	1.08		0.76	0.55	0.99	0.61	0.45	1.12		0.009	0.060	0.0003
Saudi Arabia	4	4.20	3.18	0.02	0.02		0.01	0.94	0.26	0.03	0.17	0.04			2.78	2.66	0.04			4.40	-3.45	1.41		0.35	0.41	0.71	0.23	0.26	0.93	1.19	0.008	0.034	0.0003
Syrian Arab Repub	4	3.60	1.86				0.01	0.53	0.43	#VALUE!	0.11	0.04			2.04	1.71	0.05	2.51	3.16	3.30	-6.94	1.18		0.67	0.50	1.09	0.58	0.44	0.94	1.19	0.007	0.024	0.0032
Tunisia	4	3.92	5.61	0.02	0.07	0.41	0.01	0.71	0.54	0.02	0.05	0.02			2.70	2.42	0.06	1.51	2.20		-5.06	1.38		0.98	0.95	1.12	0.85	0.82	1.57	1.57	0.008	0.042	0.0005
United Arab Emirat	4	4.44	1.51				0.01	0.87	0.28	0.02	0.20	0.03			2.70	2.55	0.03			6.20	-3.36	0.95		0.13	0.17	0.81	0.09	0.13		1.17	0.009	0.057	0.0003
West Bank and Ga	4																							0.05	0.04	1.57	0.05	0.04	0.79	0.73			0.0070
Yemen	4	2.87	2.03	0.16	0.47	0.34	0.01	0.28			0.03	0.39	0.00	0.01	1.91	1.49	0.05	1.98	2.34	0.70	-1.99	2.01		0.48	0.42	0.94	0.38	0.34			0.005	0.025	0.0042
Anguilla	5														2.71	2.56	0.05															
Antigua & Barbuda	5	4.11																				1.08		0.81					1.22	1.29			
Argentina	5	4.16	2.17	0.07	0.17	0.54	0.01	1.12	0.35	0.25	0.06	0.03	0.01	0.07	3.11	2.76	0.10				-3.66	1.20		0.66	0.79	0.55	0.33	0.38			0.009	0.029	0.0003
Bahamas	5	4.29					0.01	1.13					0.03	0.17	3.13	2.83	0.07				-4.85	1.18									0.008		0.0003
Barbados	5	4.25	3.48				0.01	0.56	0.19	0.03			0.02	0.09	3.06	2.86	0.07				-1.95	1.08		0.15	0.28	1.14	0.14	0.25			0.009	0.069	0.0003
Belize	5	3.87	5.82				0.01	0.50					0.02	0.13	2.53	2.26	0.05				-4.56	1.23		0.61	1.40	0.84	0.44	0.83			0.008	0.030	0.0043
Bermuda	5																												0.80	1.02			0.0003
Bolivia	5	3.44	2.65	0.23	0.44	0.64	0.01	0.70	0.37	0.30	0.06	0.23	0.00	0.01	2.27	2.05	0.07	2.15	2.12	1.10	-4.21	1.81		0.48	0.77	0.90	0.37	0.58	0.98	1.12	0.007	0.029	0.0025
Brazil	5	3.94	2.94	0.08	0.21	0.61	0.01	1.00	0.17	0.10	0.06	0.07	0.01	0.14	3.18	2.91	0.09	2.18	2.55	2.60	-3.94	1.52		0.91	0.57	0.87	0.65	0.43			0.008	0.035	0.0012
British Virgin Island	5																																
Cayman Islands	5																												1.12	1.25			0.0003
Chile	5	4.08	4.61	0.02	0.06	0.58	0.01	1.07	0.44	0.34	0.06	0.04	0.00	0.08	2.86	2.53	0.06			1.70	-5.31	1.00		1.31		0.91	0.87		1.17	1.19	0.009	0.070	0.0003
Colombia	5	3.88	2.84	0.07	0.18	0.63	0.01	0.81			0.05	0.13	0.01	0.04	2.76	2.69	0.08			1.90	-3.64	1.32		0.55	0.98	0.69	0.34	0.56		1.33	0.008	0.038	0.0015
Costa Rica	5	4.03	4.48	0.03	0.10	0.52	0.01	0.66	0.27	0.07	0.09	0.05	0.00	0.02	2.77	2.66	0.07			2.40	-2.51	1.08		0.87		1.09	0.74	1.15		1.14	0.008	0.050	0.0023
Cuba	5						0.01	0.86	0.46	0.30	0.09	0.02	0.00	0.00	2.36	2.30	0.06			13.40	-4.15	0.85		0.78	1.23	1.15	0.70	1.04			0.008	0.042	0.0021
Dominica	5	3.80	2.14												2.49	2.34	0.06				-1.08	1.18							1.00	1.25	0.008	0.056	0.0021
Dominican Republi	5	3.92	5.20	0.03	0.16	0.54	0.01	0.73	0.15	0.11	0.09	0.29	0.01	0.06	2.58	2.08	0.06	2.75	3.00	3.70	-4.87	1.49		0.52	0.72	1.01	0.43	0.60	0.82	1.22	0.008	0.030	0.0014
Ecuador	5	3.66	4.34	0.18	0.42	0.57	0.01	0.68	0.24	0.05	0.06	0.06	0.00	0.02	2.42	2.03	0.06	2.09	2.57	3.10	-5.40	1.40		0.25	0.38	0.98	0.21	0.31	0.73	1.00	0.008	0.021	0.0003
El Salvador	5	3.72	2.72	0.19	0.42	0.55	0.01	0.64			0.09	0.11	0.01	0.05	2.57	2.22	0.08	2.47	3.05	2.00	-5.12	1.43		0.47	0.65	1.15	0.43	0.58			0.007	0.040	0.0033
Grenada	5	3.93	4.00				0.01								2.68	2.54	0.07				-3.81	1.32							0.91	1.25	0.008	0.034	0.0048
Guatemala	5	3.62	2.51	0.14	0.32	0.58	0.01	0.49	0.25	0.04	0.09	0.22	0.01	0.05	2.41	2.02	0.06				-4.21	1.63		0.35	0.58						0.007	0.028	0.0062
Guyana	5	3.66	2.33				0.01	0.29					0.02	0.13	2.52	2.44	0.05				-2.22	1.80		0.60	0.46	0.73	0.38	0.30	0.49	0.57	0.008	0.026	0.0059

Haiti	5	3.25	0.47	0.57	0.89	0.63	0.01	0.40			0.09	0.48	0.02	0.12	1.92	1.50	0.08				-1.60	2.08		0.51	0.58	0.94	0.40	0.46	1.00	1.06	0.005	0.016	0.0010
Honduras	5	3.47	2.95	0.15	0.37	0.57	0.01	0.48			0.09	0.23	0.02	0.09	2.30	2.03	0.07	2.28	2.62		-2.57	1.60		0.60	1.01	1.07	0.52	0.84	1.17	1.19	0.007	0.025	0.0057
Jamaica	5	3.63	2.93	0.02	0.14	0.47	0.01	0.56	0.20	0.09	0.10	0.09	0.02	0.09	2.35	2.08	0.05	1.76	3.23	2.50		1.30						0.96	1.33	0.007	0.033	0.0045
Mexico	5	4.03	3.81	0.03	0.12	0.48	0.01	0.86	0.39	0.12	0.11	0.05	0.00	0.02	2.82	2.48	0.07			3.90	-3.50	1.43		0.86		0.89	0.63	1.15			0.008	0.035	0.0012
Montserrat	5																																
Netherlands Antilles	5						0.01	0.78																0.30					0.78	0.91			
Nicaragua	5	3.57	2.98	0.47	0.93	0.45	0.01	0.63			0.10	0.27	0.00	0.01	2.36	2.04	0.08			1.80	-3.93	1.57		0.62	1.10	1.02	0.52	0.87	1.12	1.12	0.007	0.026	0.0058
Panama	5	3.89	4.02	0.07	0.18	0.60	0.01	0.79			0.10	0.23	0.01	0.05	2.80	2.63	0.08	2.73	3.03	3.20	-2.37	1.38				0.93	1.04		0.67	1.04	0.008	0.032	0.0033
Paraguay	5	3.70	1.60	0.14	0.30	0.62	0.01	0.62	0.34	0.15	0.05	0.15	0.00	0.02	2.51	2.04	0.08	2.02	2.49	1.40	-3.77	1.36		0.57	0.50	1.16	0.52	0.45	0.83	0.98	0.008	0.024	0.0058
Peru	5	3.80	4.00	0.11	0.31	0.55	0.01	0.81			0.06	0.12	0.01	0.03	2.37	2.04	0.04				-6.97	1.43		0.75	1.22	1.15	0.67	1.03			0.008	0.035	0.0033
Puerto Rico	5			0.02	0.02		0.01	1.35			0.11													0.71	1.10	0.85	0.51	0.73					0.0003
Saint Kitts & Nevis	5	4.21													2.85	2.65	0.05				-3.81	1.30		0.19	0.43								0.0010
Saint Lucia	5	3.82					0.01	0.28	0.28	0.11					2.48	2.29	0.05				-2.75	1.15		0.51							0.008		0.0063
St Vincent & Grena	5						0.01	0.48							2.62	2.42	0.06	1.44	2.67		-1.23	1.30		0.36									0.0067
Suriname	5	3.77	4.11				0.01	0.83					0.02	0.11	2.58	2.24	0.08	2.01	2.60		-1.42	1.59									0.008	0.035	
Trinidad & Tobago	5	4.18		0.12	0.40	0.40	0.01	0.12			0.12	0.10	0.03	0.14	2.72	2.31	0.04	3.42	4.31		-3.57	1.28											
Turks & Caicos Isla	5																												1.57	1.57			0.0020
Uruguay	5	4.03	2.36	0.02	0.06	0.47	0.01	1.17	0.37	0.26	0.06	0.02	0.01	0.03	2.89	2.53	0.08			4.50	-3.67	1.18		0.62	0.84	0.99	0.51	0.68			0.009	0.067	0.0003
US Virgin Islands	5						0.01	1.23																						0.98			
Venezuela	5	3.82	1.50	0.19	0.41	0.50	0.01	1.21	0.34	0.28	0.05	0.18	0.01	0.04	2.45	2.08	0.05			2.60	-2.03	1.32		0.61	0.78	0.98	0.49	0.62	0.80	0.83	0.008	0.020	0.0005
Bangladesh	6	3.33	5.63	0.43	1.00	0.34	0.01	0.25	0.46	0.03	0.05	0.30	0.00	0.00	1.81	1.26	0.03	1.95	2.01	0.50	-4.63	1.86		1.06	0.70	1.16	0.92	0.63			0.005	0.020	0.0088
Bhutan	6	3.60	7.64				0.01	0.11					0.00	0.00	1.97	1.78	0.05				-5.12	1.88		0.78		1.14	0.70		1.57	1.57	0.006	0.050	
DPR Korea	6						0.01	0.66	0.64		0.05	0.34			1.67	1.60	0.04					1.74		0.41	1.34	1.10	0.37	1.05	0.78	1.04			0.0014
India	6	3.53	6.43	0.35	0.93	0.38	0.01	0.29	0.31	0.03	0.07	0.20	0.01	0.05	1.96	1.20	0.05	1.68	1.66		-3.01	1.87			0.69	1.03		0.58	0.80	0.88	0.006	0.035	0.0074
Indonesia	6	3.61	4.42	0.08	0.55	0.35	0.01	0.50	0.71	0.04	0.02	0.06	0.00	0.01	2.07	1.61	0.03	2.27	2.21	0.70	-6.02	1.56			0.82	1.14	1.19	0.72			0.007	0.023	0.0072
Maldives	6	3.86	4.92				0.01	0.30	0.46	0.09					2.69	2.60	0.08	2.72	3.15		-6.19	1.62		0.63	1.06	1.03	0.53	0.84	0.61	0.89	0.007	0.033	
Myanmar	6	3.30	11.40				0.01	0.31	0.47	0.12	0.03	0.05	0.01	0.07	1.58	0.69	0.02	1.75	1.42	0.80	-1.39	2.02		0.54		1.02	0.45	1.18	0.78	1.12	0.006	0.020	0.0095
Nepal	6	3.26	5.00	0.24	0.76	0.49	0.01	0.16	0.30	0.23	0.04	0.17	0.01	0.03	1.85	1.27	0.06			0.30	-4.43	1.87		0.77	0.70	1.08	0.66	0.60	0.75	0.91	0.005	0.025	0.0080
Sri Lanka	6	3.69	5.06	0.06	0.43	0.41	0.01	0.15	0.30	0.02	0.08	0.22	0.00	0.00	2.21	1.87	0.04			1.20	-5.51	1.15			1.01	1.04		0.82	1.25	1.43	0.007	0.032	0.0067
Thailand	6	3.93	5.17	0.02	0.25	0.43	0.01	0.33	0.41	0.03	0.07	0.22	0.01	0.08	2.47	2.28	0.04				-3.84	1.32		0.67	0.81	0.84	0.48	0.57			0.008	0.033	0.0072
Timor-Leste	6	3.23					0.01	0.27							2.15	2.05	0.11				-6.12	1.79		0.79	0.33	0.96	0.63	0.27			0.005	0.026	
American Samoa	6																							0.65		0.85	0.47	1.05					
Brunei Darussalam	6	4.38	2.00				0.01	0.83					0.00	0.00	2.79	2.69	0.03				-1.38	0.95		0.77		0.79	0.52			0.42	0.009			
Cambodia	6	3.47	8.65	0.35	0.89	0.43	0.01	0.20	0.32	0.12	0.05	0.34	0.01	0.06	2.15	1.56	0.07	2.51	2.11	1.00	1.47	2.16		1.01	0.65	1.18	0.90	0.60	0.78	0.88	0.006	0.020	0.0010
China	6	3.83	10.18	0.10	0.36	0.49	0.01	0.42	0.65	0.04	0.04	0.12	0.00	0.00	2.44	2.02	0.05	2.08	2.25	2.70	-3.57	1.43		1.21	0.92	1.22	1.07	0.84			0.008	0.035	0.0080
China, Hong Kong	6	4.55	5.79	0.02	0.02	0.45	0.01	1.57			0.08		0.00	0.01										0.50	0.50	0.88	0.38	0.38			0.009	0.083	0.0080
China, Macao SAR	6						0.01	1.57																0.75	0.99	1.18	0.68	0.89				0.057	0.0080
Cook Islands	6								0.37	0.21					2.64	2.58	0.04				-3.03	1.30		1.45		1.57	1.45	0.00					
Fiji	6	3.77	4.04				0.01	0.53	0.25	0.05			0.00	0.01	2.45	2.25	0.05				-3.35	1.26		1.25	1.08	0.78	0.73	0.67			0.008		0.0040
French Polynesia	6						0.01	0.54																0.49	0.90	1.09	0.43	0.77					
Guam	6						0.01	1.22																0.66	0.82	1.02	0.55	0.67					0.0003
Kiribati	6	3.39	3.06												2.43	2.40	0.14	3.27	2.75		-2.06	1.81		0.76	0.97	1.19	0.69	0.87		0.54		0.033	
Lao PDR	6	3.33	5.86	0.27	0.83	0.35	0.01	0.21			0.03	0.19	0.00	0.01	1.87	1.18	0.04	2.24	2.43		-4.71	1.90		0.76	0.87	1.12	0.67	0.76	1.37	1.43	0.006	0.019	
Malaysia	6	4.05	4.35	0.02	0.09	0.51	0.01	0.74	0.59	0.03	0.11	0.03	0.00	0.03	2.60	2.37	0.04			2.40	-4.09	1.08			0.90	0.78	0.85	0.58			0.008	0.051	0.0003
Marshall Islands	6														2.74	2.73	0.15				-3.07	1.76		0.45	0.90	1.06	0.39	0.76					
Micronesia	6						0.01								2.46	2.40	0.08				0.19	1.62		0.62	0.95	0.93	0.49	0.71	0.68	0.67			0.0012
Mongolia	6	3.35	5.20	0.11	0.46	0.33	0.01	0.60	0.46	0.05	0.02	0.27	0.00	0.00	2.15	1.97	0.06	2.99	2.75	6.00	-5.17	1.69			1.29	1.07	1.09	1.00			0.007	0.030	0.0051
Nauru	6								0.49	0.56					2.60	2.46	0.08					1.48		1.13	0.43	0.73	0.65	0.28					
New Caledonia	6						0.01	0.69																1.33	0.37	1.22	1.14	0.35					
Niue	6														2.39	2.38	0.15					1.58		0.84									
Northern Mariana Is	6																							1.26	0.58								
Palau	6								0.40	0.10					2.92	2.88	0.10				-4.81	1.04				1.57			0.40	0.40			
Papua New Guinea	6	3.41	0.35			0.53	0.01	0.13			0.03		0.02	0.10	2.17	2.09	0.04			0.60	-1.41	1.87		0.98	0.22	0.79	0.63	0.15	1.06	1.02	0.005	0.020	0.0090
Philippines	6	3.70	4.16	0.15	0.44	0.46	0.01	0.68	0.42	0.09	0.08	0.18	0.00	0.00	2.31	1.91	0.03	2.22	2.00	7.40	-4.16	1.52			0.87	1.11		0.75		1.17	0.008	0.025	0.0047
Rep. Korea	6	4.35	6.40	0.02	0.02	0.32	0.01	0.94	0.57	0.06	0.08	0.02	0.00	0.01	3.06	2.77	0.06	2.09	2.19	5.40	-2.80	0.78		0.94	0.16	0.97	0.73	0.13			0.009		0.0003
Samoa	6	3.79	4.58				0.01	0.23	0.61	0.24					2.34	2.22	0.05				-3.58	1.46		0.61	0.93	1.14	0.55	0.82			0.008	0.045	0.0070
Solomon Islands	6	3.30	-1.43				0.01	0.17							2.06	2.03	0.06				-3.21	1.46		0.69	0.43	1.02	0.58	0.37			0.006	0.028	0.0095
Tokelau	6						0.01																										
Tonga	6	3.90	4.63					0.24	0.66	0.16					2.50	2.40	0.06				-1.83	1.38		0.59		0.81	0.42	1.18			0.008	0.017	0.0056
Tuvalu	6														2.41	2.39	0.17				-1.72	1.58			0.29	1.57		0.29					
Vanuatu	6	3.51	0.09				0.01	0.24	0.55	0.08					2.09	1.98	0.04				-3.14	1.58		0.83	0.81	0.94	0.64	0.63	0.71	1.02	0.007	0.031	0.0079
Viet Nam	6	3.49	7.57			0.35	0.01	0.27	0.46	0.02	0.03	0.16	0.01	0.03	2.27	1.70	0.06	2.31	2.26	1.30	-6.24	1.28		0.30	1.00	1.18	0.27	0.89			0.007	0.026	0.0070
Wallis & Futuna Is	6																							1.38									0.0070
Number of country observations in each region																																	
AFR	49	48	48	29	29	32	47	47	28	28	43	42	46	46	48	48	48	23	23	20	43	49	0	41	40	41	41	41	35	43	46	48	44
CEEUR	28	27	28	22	22	24	28	28	23	23	24	24	21	21	28	28	28	10	10	25	27	27	0	22	22	26	23	24	17	22	27	27	27
HI	30	27	27	27	27	24	28	27	27	27	24	23	25	25	30	30	30	3	3	23	29	30	19	22	15	14	11	13	21	20	27	27	29
EMR	19	17	17	9	9	7	18	18	13	12	15	13	12	12	18	18	18	10	10	13	17	17	0	17	18	19	18	18	14	12	16	18	19
LAC	42	31	26	22	22	21	33	32	16	16	23	22	27	27	33	33	33	12	12	16	31	33	0	28	21	23	23	21	19	22	29	27	34
SEAWPR	43	27	26	14	14	16	32	31	23	22	18	16	20	20	34	34	34	13	13	13	31	34	0	34	33	39	34	36	13	16	26	25	26
Total	211	177	172	123	123	124	186	183	130	128	147	140	151	151	191	191	191	71	71	110	178	190	19	164	149	162	150	153	119	135	171	172	179

Appendix C. Correlation statistics for transformed data

Region	GDP 2005	chnge GDP %/yr	Poverty % below 1$/day	Poverty % below 2$/day	Gini index	Prop pop 15+	Urban (%)	Prevalence smoking M	Prevalence smoking F	Prevalence DM %	Prevalence undernutrition %	Adult HIV prev %	HIV prev in adult incident TB cases %	Per capita total expenditure on health $PPP 2004	Per capita government expenditure on health $PPP 2004
r-squared															
AFR	0.01	0.04	0.08	0.16	0.10	0.00	0.02	0.01	0.00	0.01	0.03	0.01	0.03	0.04	0.03
CEEUR	0.61	0.11	0.15	0.43	0.06	0.01	0.10	0.09	0.45	0.06	0.36	0.06	0.07	0.66	0.63
HI	0.02	0.00	0.03	0.07	0.01	0.08	0.08	0.09	0.06	0.47		0.00	0.00	0.04	0.08
EMR	0.34	0.04	0.15	0.27	0.00	0.00	0.03	0.00	0.45	0.00	0.04	0.20	0.20	0.00	0.14
LAC	0.07	0.21	0.14	0.11	0.07	0.07	0.15	0.07	0.02	0.02	0.31	0.41	0.26	0.02	0.01
SEAWPR	0.00	0.03	0.04	0.00	0.32	0.03	0.02	0.03	0.12	0.01	0.00	0.06	0.10	0.03	0.00
AFRlow	0.05	0.24	0.15	0.00	0.37	0.08	0.05	0.03	0.71	0.07	0.33	0.18	0.19	0.00	0.01
AFRhigh	0.05	0.06	0.29	0.36	0.05	0.00	0.05	0.08	0.08	0.06	0.22	0.01	0.01	0.06	0.05
C Europe	0.32	0.15		0.61	0.28	0.06	0.06	0.08	0.30	0.56	0.17	0.01	0.01	0.56	0.53
E Europe	0.53	0.00	0.11	0.26	0.08	0.19	0.20	0.00	0.41	0.07	0.41	0.00	0.00	0.47	0.46
World	0.18	0.01	0.09	0.15	0.05	0.08	0.08	0.02	0.17	0.12	0.17	0.09	0.10	0.17	0.17
r-squared > 0.2															
AFR															
CEEUR	0.61			0.43					0.45		0.36			0.66	0.63
HI										0.47					
EMR	0.34			0.27					0.45			0.20			
LAC		0.21									0.31	0.41	0.26		
SEAWPR					0.32										
World															
t-test															
AFR	0.39	1.03	1.32	1.99	1.49	0.15	0.71	0.31	0.19	0.46	0.93	0.61	0.86	1.07	0.88
CEEUR	-6.03	1.66	1.75	3.66	1.16	0.44	1.56	1.37	3.83	1.15	3.35	1.09	1.10	6.61	6.25
HI	0.69	0.12			0.45	1.45	1.44	1.49	1.19	4.34	0.00	0.10	0.06	1.00	1.47
EMR	2.26	0.65	0.93	1.35	0.02	0.07	0.52	0.03	2.22	0.02	0.55	1.12	1.11	0.09	1.27
LAC	-1.27	2.29	1.78	1.60	1.15	1.34	2.02	0.95	0.52	0.69	3.01	3.91	2.76	0.66	0.56
SEAWPR	0.19	0.62	0.45	0.08	1.68	0.65	0.56	0.56	1.17	0.19	0.15	0.69	0.96	0.59	0.19
World	-4.92	0.93	2.79	3.70	2.33	3.30	3.42	1.31	4.38	3.95	4.67	3.27	3.50	5.10	5.17
r2>0.2 with p<0.05															
AFR															
CEEUR	0.61			0.43					0.45		0.36			0.66	0.63
HI										0.47					
EMR	0.34														
LAC		0.21									0.31	0.41	0.26		
SEAWPR															
World															
sign of r															
AFR	0.08	0.20	-0.28	-0.41	0.31	0.03	0.14	0.07	0.04	-0.09	-0.18	0.12	0.17	0.20	0.17
CEEUR	-0.78	0.33	0.38	0.65	0.25	-0.09	-0.31	0.31	-0.67	-0.25	0.60	0.25	0.26	-0.81	-0.79
HI	0.14	0.02	-0.17	-0.26	0.10	-0.28	0.28	-0.30	0.24	-0.69	0.00	-0.02	-0.01	0.20	0.29
EMR	0.58	0.20	-0.39	-0.52	0.01	0.02	0.16	-0.01	-0.67	-0.01	-0.19	0.45	0.45	-0.03	0.37
LAC	-0.27	-0.46	0.37	0.34	0.26	-0.27	-0.39	-0.26	-0.15	-0.15	0.56	0.64	0.51	-0.14	-0.12
SEAWPR	0.05	0.17	-0.20	-0.04	-0.57	0.17	-0.14	-0.17	-0.35	0.08	-0.07	0.24	0.32	0.16	-0.05
World	-0.43	0.08	0.30	0.39	0.23	-0.28	-0.29	-0.13	-0.41	-0.35	0.41	0.30	0.32	-0.41	-0.42
p-value of t-distribution															
AFR	0.70	0.31	0.20	0.06	0.15	0.88	0.48	0.76	0.85	0.65	0.36	0.55	0.40	0.30	0.39
CEEUR	0.00	0.11	0.10	0.00	0.26	0.67	0.13	0.19	0.00	0.27	0.00	0.29	0.29	0.00	0.00
HI	0.50	0.91			0.66	0.16	0.16	0.15	0.24	0.00	1.00	0.92	0.95	0.33	0.15
EMR	0.05	0.53	0.39	0.23	0.99	0.95	0.61	0.98	0.07	0.99	0.60	0.31	0.32	0.93	0.23
LAC	0.22	0.03	0.09	0.13	0.26	0.19	0.06	0.36	0.61	0.50	0.01	0.00	0.01	0.52	0.58
SEAWPR	0.85	0.55	0.67	0.94	0.14	0.53	0.58	0.59	0.27	0.86	0.88	0.51	0.37	0.57	0.85
World	0.00	0.35	0.01	0.00	0.02	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
r-squared for p<0.05															
AFR															
CEEUR	0.61			0.43					0.45		0.36			0.66	0.63
HI			0.03	0.07						0.47					
EMR	0.34														
LAC		0.21									0.31	0.41	0.26		
SEAWPR															
World	0.18		0.09	0.15	0.05	0.08	0.08		0.17	0.12	0.17	0.09	0.10	0.17	0.17

Appendix C. Correlation statistics for transformed data

Region	Total exp health as % GDP	TBexpenditure/cap	TBexpenditure/case	Health workers/1000 population	Change U5M %/yr 1990-2005	U5M 2005	ForeignTB %	Detection all new cases %	Detection new ss+ cases %/yr	Treatment success %	Detection all new * treat success	Detection ss+ * treat success	Improved water supply %	Improved sanitation %	Human Dev Index 2005	Corruption Perception Index	Solid fuel
r-squared																	
AFR	0.00	0.49	0.00	0.33	0.01	0.04		0.11	0.17	0.04	0.03	0.07	0.09	0.00	0.00	0.00	0.00
CEEUR	0.23	0.28	0.37	0.03	0.13	0.39		0.00	0.05	0.01	0.00	0.02	0.12	0.40	0.60	0.52	0.30
HI	0.00	0.23	0.39	0.04	0.01	0.03	0.47	0.04	0.16	0.28	0.04	0.08	0.00	0.00	0.02	0.00	0.00
EMR	0.53	0.00	0.06	0.00	0.11	0.13		0.01	0.03	0.21	0.00	0.02	0.02	0.06	0.13	0.08	0.06
LAC	0.00	0.00	0.00	0.11	0.36	0.35		0.09	0.32	0.07	0.02	0.26	0.41	0.43	0.14	0.10	0.11
SEAWPR	0.00	0.30	0.32	0.29	0.00	0.29		0.14	0.00	0.02	0.10	0.01	0.05	0.00	0.03	0.01	0.09
AFRlow	0.00	0.45	0.10	0.08	0.07	0.15		0.08	0.06	0.05	0.04	0.05	0.23	0.04	0.12	0.16	0.00
AFRhigh	0.04	0.30	0.01	0.35	0.01	0.01		0.05	0.17	0.00	0.02	0.12	0.22	0.02	0.06	0.03	0.00
C Europe	0.08			0.30	0.12	0.36		0.33	0.00	0.03	0.45	0.04	0.57	0.12	0.34	0.37	0.68
E Europe	0.01	0.28	0.37	0.01	0.00	0.13		0.03	0.35	0.01	0.01	0.25	0.04	0.30	0.43	0.42	0.26
World	0.08	0.00	0.12	0.03	0.17	0.25		0.04	0.03	0.02	0.03	0.05	0.15	0.26	0.20	0.14	0.09
r-squared > 0.2																	
AFR		0.49		0.33													
CEEUR	0.23	0.28	0.37			0.39								0.40	0.60	0.52	0.30
HI		0.23	0.39				0.47			0.28							
EMR	0.53									0.21							
LAC					0.36	0.35			0.32			0.26	0.41	0.43			
SEAWPR		0.30	0.32	0.29		0.29											
World						0.25								0.26	0.20		
t-test																	
AFR	0.30	3.51	0.02	2.31	0.55	1.03		1.68	2.16	0.92	0.89	1.28	1.28	0.30	0.12	0.17	0.32
CEEUR	2.62	1.63	2.03	0.82	1.86	3.83		0.24	1.01	0.54	0.24	0.61	1.31	3.36	5.89	4.85	3.09
HI	0.26	0.55	0.80	0.91	0.58	0.91	3.85	0.83	1.57	2.07	0.56	1.00	0.26	0.26	0.78	0.20	0.00
EMR	3.37	0.12	0.49	0.10	1.10	1.21		0.34	0.57	1.61	0.09	0.44	0.37	0.61	1.20	0.95	0.82
LAC	0.14	0.19	0.01	1.28	3.47	3.41		1.35	2.73	1.19	0.58	2.44	2.66	3.00	1.84	1.57	1.62
SEAWPR	0.05	1.30	1.36	1.29	0.04	2.30		1.41	0.14	0.55	1.21	0.45	0.47	0.14	0.60	0.41	1.16
World	3.32	0.32	2.60	1.49	5.11	6.55		2.11	1.67	1.65	1.70	2.47	3.76	5.54	5.72	4.43	3.42
r2>0.2 with p<0.05																	
AFR		0.49		0.33													
CEEUR	0.23					0.39								0.40	0.60	0.52	0.30
HI							0.47										
EMR	0.53																
LAC					0.36	0.35			0.32			0.26	0.41	0.43			
SEAWPR						0.29											
World						0.25								0.26	0.20		
sign of r																	
AFR	-0.06	0.70	-0.01	0.57	0.11	0.20		0.34	0.41	-0.19	0.18	0.26	-0.30	-0.06	-0.02	0.03	0.06
CEEUR	-0.48	-0.52	-0.61	0.18	0.36	0.62		0.06	-0.23	-0.12	0.06	-0.13	-0.34	-0.63	-0.78	-0.72	0.55
HI	0.05	0.48	0.62	0.20	0.12	0.18	0.68	-0.19	-0.40	0.53	0.19	-0.29	0.06	0.07	0.16	0.04	0.00
EMR	-0.73	-0.06	-0.24	-0.04	-0.33	-0.36		0.12	0.19	-0.45	-0.03	0.15	0.12	-0.24	0.35	0.29	-0.25
LAC	0.03	-0.06	0.00	-0.32	0.60	0.59		-0.30	-0.56	-0.26	-0.13	-0.51	-0.64	-0.65	-0.37	-0.32	0.33
SEAWPR	0.01	-0.54	-0.56	-0.54	0.01	-0.54		-0.38	-0.04	-0.14	-0.32	-0.12	0.23	0.06	0.16	-0.12	-0.31
World	-0.28	0.05	-0.35	-0.16	0.42	0.50	0.68	-0.20	-0.16	-0.16	-0.17	-0.23	-0.39	-0.51	-0.45	-0.37	0.29
p-value of t-distribution																	
AFR	0.77	0.00	0.98	0.04	0.59	0.31		0.11	0.04	0.37	0.38	0.21	0.22	0.77	0.91	0.87	0.75
CEEUR	0.02	0.15	0.08	0.42	0.08	0.00		0.81	0.33	0.60	0.81	0.55	0.21	0.00	0.00	0.00	0.01
HI	0.79	0.68	0.57	0.37	0.57	0.37	0.00	0.42	0.14	0.06	0.59	0.34	0.80	0.79	0.45	0.85	1.00
EMR	0.01	0.91	0.65	0.93	0.30	0.25		0.74	0.59	0.14	0.93	0.67	0.72	0.57	0.26	0.36	0.43
LAC	0.89	0.86	0.99	0.22	0.00	0.00		0.19	0.01	0.25	0.57	0.03	0.02	0.01	0.08	0.13	0.12
SEAWPR	0.96	0.26	0.24	0.27	0.97	0.04		0.18	0.89	0.59	0.25	0.66	0.66	0.89	0.56	0.69	0.27
World	0.00	0.75	0.01	0.14	0.00	0.00	1.00	0.04	0.10	0.10	0.09	0.02	0.00	0.00	0.00	0.00	0.00
r-squared for p<0.05																	
AFR		0.49		0.33					0.17								
CEEUR	0.23					0.39								0.40	0.60	0.52	0.30
HI							0.47										
EMR	0.53																
LAC					0.36	0.35			0.32			0.26	0.41	0.43			
SEAWPR						0.29											
World	0.08		0.12		0.17	0.25		0.04				0.05	0.15	0.26	0.20	0.14	0.09