

ICT Development and Corruption: An Empirical Study

Research-in-Progress

Utkarsh Shrivastava
University of South Florida
utkarsh1@mail.usf.edu

Anol Bhattacharjee
University of South Florida
abhattach@usf.edu

Abstract

This study investigates the relationship between information and communication technology (ICT) development at the country level and prevailing corruption after controlling for political, economic and social factors. It also studies the relationship between corruption, government effectiveness, and economic efficiency. We use the ICT development index (IDI) as the measure of ICT development, and corruption perception index (CPI) as a measure of country-level corruption. An analysis of 98 countries for the year 2010 shows that ICT development is negatively related to corruption, which in turn, is negatively related to government effectiveness and economic efficiency.

Keywords

ICT, Corruption, Economic Efficiency, Government Effectiveness, Political Stability, Political Openness, Economic Wealth

Introduction

Corruption significantly impacts economic development and political stability of any nation (Charoensukmongkol and Moqbel 2014). It involves improper allotment of government funds, inadequate allocation of resources, biased policies and rules which benefit certain authority or politician. Hierarchy in political structure promotes corrupt activities. Corruption can add up to 10% to the total cost of doing business globally and up to 25 % to the cost of public procurement in developing countries (UN Global Compact 2011). Moreover, 61% of the supply chain managers view corruption as second most significant risk to their business after product safety (UN Global Compact 2010). Corrupt activities like bribery in order to acquire government tenders, biased decisions by public officials and lack of transparency in the system are all adversely effecting business environment. Effective ICT development can lead to more transparency and create a culture of openness, which is important for competitive business environment Bertot et al. (2010).

Akçay (2006) defined corruption as “misuse of public power for private benefit and is most likely to occur when both sectors meet”. Higher the control of public officials higher is the opportunity for corruption (USAID Handbook on Fighting Corruption 1999). Corruption can occur at micro level in the form of public officers harassing citizens and misusing their authority against citizens for bribes while at macro level it involves biased allotment of resource by government to businesses or improper contract allotment. Unfortunately the literature on causes and effects of corruption is very scattered and studies fail to build on one another, they vary considerably in their measurement of corruption (Eigen, 2002). Moreover framework and theoretical assumption utilized in these theories is conflicting (Judge et al. 2011). This meta-analytic study on the antecedents and effects of corruption threw significant light in our current understanding of factors leading to corruption. Corruption is both moral and economic phenomena (Collier 2002). It is moral because social-cultural norms play an important role in corrupt behavior and morality influence as well as is influenced by these norms. Political, legal and economic institutions of an economy are important in putting constraints on illegal activities while promoting beneficial behaviors. Meta-analysis on corruption studies found that in most of the past corruption studies political openness (PE), political stability (PS), government effectiveness (GE), economic efficiency (EE), economic wealth

(GDP) and education (EDU) showed high correlation to corruption and were important antecedents or effects of the corruption.

Information and Communication Technology (ICT) is defined as an umbrella term that includes any communication device or encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems as well as the various services and applications associated with them, such as videoconferencing and distance learning (Charoensukmongkol and Moqbel 2014). ICT can serve as a means for reducing corruption by decentralizing power in the society through more information (Castells 2007). ICT tools and services provide more information to citizens on government actions and bring more accountability to the authority. Number of internet users or maturity of e-government cannot be a measure for ICT development as it encompasses a broad range of tools as services. Substantial research is done on how ICT use transforms social and political life in any country (Becker, 2001; Harwit and Clark, 2001). ICT enhances public dialog and improves collaboration (Dahlgren 2005). A study by Kampen and Snijkers (2003) showed that ICT has made significant contribution to global freedom and democracy.

Past literature on ICT and corruption considered the effects of specific ICT related services or sub domain as ICT investment (Charoensukmongkol 2014), e-government services (Krishnan 2013), and Internet adoption (Lio et al. 2011) on corruption. These studies also varied on the measure for ICT development. Our study utilizes a standardized measure of overall ICT development to investigate its relationship with corruption. In this study we also describe and investigate measures from third party sources (Table 1) for the suitability in model development. Using the secondary data for 98 countries we try formulating a mathematical relationship between ICT, corruption and other control variables. The impact of corruption on Government Effectiveness (GE) and Economic Efficiency (EE) is also investigated. The research questions examined in this study are: (1) Is ICT development related to corruption at the country level, and (2) How do corruption relate to economic and governmental functioning of a country?

ICT and Corruption

Information and communication Technology (ICT) refers to various hardware and software systems which enables users to access, store, process, and transmit information. Studies have shown that ICT can create an atmosphere of openness that stems corrupt behavior (Bertot et al. 2010) by increasing the chances of government functionaries getting caught in bribery and related behaviors and by creating a general awareness of corruption among the public. Presence of large network of media on internet has also been shown to have a deterring effect on corruption (Goel et al. 2012).

Maturity of e-government services is negatively related to corruption (Krishnan et al. 2013). E-government services, which represents a mature ICT regime, reduces discretion thereby curbs the chances of arbitrary action and also increases the chances of exposure (Anderson 2009). Empirical analysis found that e-government has led to reduction in corruption in the decade from 1996-2006 in non – OECD countries. In Pakistan, the restructuring of tax department led to reduction in incidence of bribery while in Philippines, e-procurement systems to allow for public bidding on government contracts reduced price fixing and increased government's accountability (Anderson 2009).

For a country to effectively use ICT to reform bureaucracy and combat corruption, some important conditions should be met. These include minimal democracy, a sense of crisis, a renewed ideology and political will (Mahmood 2004). Hence, the presence of ICT only in an economy would not lead to reduced corruption. From the past studies on corruption too it's observed that there are some political, economical and social factors which are highly correlated to corruption. Hence in this study we try to analyze whether ICT can be a detrimental factor in determining corruption across various nations while considering other factors which are significant in reducing corruption. Measure of ICT development used is also more generalized as compared to number of internet users (Lio et al. 2011) or E-government maturity (Krishnan et al. 2013). The choice of control variables and their measures is also distinct.

Hypothesis 1: The level of ICT development in a country is negatively related to its level of corruption.

This hypothesis would be tested after controlling for political openness, economic wealth (GDP / capita), political stability and education. These factors have been proven important antecedent of corruption and exhibit high correlation with the corruption measure (Judge et al. 2011).

Political and economic effects of corruption

Past studies have concluded that high level of corruption can have adverse effect on the economy and also reduce trust of the citizens on the government. A study on corruption in Romania showed that high corruption has lead to negative impact on the effectiveness of the public actions. Study further observed that high level of corruption leads to generation of an underground economy which supports irrational use of public financial resources and further impacts the effectiveness of the public actions. Similarly on effects of corruption on economic efficiency studies have shown that high corruption leads to less economic efficiency (Guetat 2006). However, earlier studies discussed about the positive effects of corruption on the economic efficiency of a nation. Bribes can increase the income of the civil servants and help citizens avoid bureaucratic regulations and make system work faster (Lui 1985). Of past 42 studies on corruption analyzed by Judge et al. (2011) 14 studies considered Government Effectiveness of which six concluded that corruption negatively affects GE while of 35 studies which considered Economic Efficiency 24 concluded that corruption negatively impacts it. Considering the amount of data and reliable measures now available it's worthwhile to test the next two hypotheses.

Hypothesis 2(a): The level of corruption in a country is negatively related to its government effectiveness.

Hypothesis 2(b): The level of corruption in a country is negatively related to its economic efficiency.

Measures and Data

Over the years various studies on ICT and corruption utilized different indicators as measures for latent constructs like PS, GE, PO, and EE. Some studies used number of internet users, ICT network or ICT intensity as indicator of ICT development (Shirazi 2010). Today several standard measures for complex constructs are available from third party data providers. For example International Telecommunication Union has been publishing data on ICT development index (IDI) for various countries since 2007, based upon not just the penetration of ICT but also upon usage and necessary skills required for operation services. We believe such standardized indexes are more balanced measures of these complicated constructs and cover most of the aspects related to it. Similarly for measuring CPI published by Transparency International since 1995 is used. It is based on the surveys filled out by multiple business executives, financial journalists and country experts. Prior research has demonstrated that CPI is a reliable and valid measure (Lancaster and Montilola 1997)

Judge et al. (2011) did meta analysis of 42 empirical studies on corruption to quantitatively summarize the corruption literature. The study focused on macro-level antecedents and effects of the corruption and observed that political stability (PS), political openness (PO), economic wealth (EW) and Education were important antecedents of corruption while Government Effectiveness (GE), Economic Efficiency (EE) are effects of corruption. These constructs have highest correlation with corruption indicators across all the 42 studies and cover all the three domains i.e. political, economic, and social. Table (1) below displays indicators for standardized measures of CPI, IDI, PO, PS, GE, EE. It also describes scale and source for constructs contained. For measuring Economic Wealth (GDP / Capita) is used as a metric which has been proven to show negative impact on the corruption. Past studies have concluded that poverty makes individuals more inclined towards corruption (Serra 2006). Education has been measured using percentage of adults who can read, write and do day to day numerical calculation. The study analyzes a total of 98 countries for which data regarding all the indicators is available. Table (1) below analyzes various indicators used in the study and breaks down those indicators into smaller constructs which were either directly referred in the survey or questionnaire presented to experts or general Population or were measured directly from some secondary data source. As evident indicators of all the measures are distinguishable from each other and are accounting for most of the aspects of the measured constructs. The data for all the constructs is taken from third party sources and details about countries used in analysis can be viewed in Appendix.

Table (1) Measures and Indicators

Constructs	Indicators / Scale / Source
Corruption Perception Index (CPI) 2010	Accountability of (Executives and public employees, Public Funds), Information access to society, Vested Interests of State, Penalties for abuse of position, Government Control over Corruption, Misappropriation of funds, Abuses to public resources, Professionalism in civil services, Independent Auditing of Finances, Independent Judiciary, Bribery for contracts and Favor, Anti corruption Initiatives, State Involvement in Business, Bureaucratic Regulations, Limitations of Public Officials, Laws on (Financial Disclosure and Conflict of Interest), Government advertizing of jobs and contracts, Fairness of Political Processes, Corruption in Media, Perception of corruption by Business People, Social Tolerance towards corruption
	Scale : 0 – 10 (0 – High Corruption, 10 – Low Corruption)
	Source : Transparency International (2010)
ICT Development Index IDI (2010)	Access sub-index: Fixed telephony, Mobile telephony International, Internet Bandwidth Households with computers Households with Internet) Use sub index: Internet users, Fixed broadband, Mobile Broadband. Skill Sub Index : Adult literacy, Gross secondary, Tertiary enrolment
	Scale : 0 – 10 (0 – Low ICT Development, 10 – High ICT Development)
	Source : International Telecommunication Union (2010)
Political Stability (PS) (2010)	Orderly transfers, Armed conflict, Violent demonstrations, Social Unrest, International tensions, Cost of Terrorism, Frequency of political killings , Frequency of disappearances, Frequency of tortures, Political terror scale , Security Risk Rating, Intensity of Internal conflicts (Ethnic, religious or regional), Intensity of violent activities (Political in nature), Intensity of social conflicts (Except Land)
	Scale : -2.5 – 2.5 (High Corrupt – Low Corrupt)
	Source : The Worldwide Governance Indicators (WGI) project (2010)
Political Openness (PO) (2010)	Electoral Participation Rate, Political Competition Rate, Competitiveness of participation, Control of corruption, Freedom of Press, Digital Access Index, Political rights, Executive Constraints, Electoral democracy, Independence of the judiciary, Freedom of Association, Bargaining Index, Participation of Minorities, Discrimination of Minorities, Rule of Law
	Scale : 0 – 60 (Low Openness - High Openness)
	Source: (M. G. et al. 2008)
Economic	Freedom of (Business, Financial, Trade, Fiscal, Corruption, Labor, Monetary,

Efficiency (EE) 2010	Investment, Choice, Competition) Property rights, Government Size, Labor Freedom, Protection from Aggression, Economic Institutions, Labor Market Efficiency, Infrastructure, Financial Market Sophistication, Macroeconomic Stability, Technological Readiness, Health and Primary Education, Market Size, Higher Education and Training, Business Sophistication, Level of Innovation, Ease of doing Business, Country Risk Report
	Scale : 0 – 1 (Less Efficient – Highly Efficient)
	Source : Economy Politics (2010)
Government Effectiveness (GE) (2010)	Quality of Bureaucracy, Quality of primary education, Satisfaction with (Transportation system Education system), Coverage Area of (Health Services, Drinking Water, Sanitation, Electrical Grid, Transport Infrastructure Waste Disposal), Quality of (Public Administration , Financial Management, Revenue Mobilization, Business Infrastructure), Government Capability, Resource Efficiency, Resource Management, Trust in Government, Economic Policy Flexibility, Efficiency of distribution, Infrastructure, Consistency in policy making
	Scale : -2.5 – 2.5 (Less Effective – High Effective)
	Source : The Worldwide Governance Indicators (WGI) project (2010)

Table 2 Correlation Matrix

	CPI	ITI	PS	GE	GDP	EDU	EE
IDI	0.829						
PS	0.728	0.667					
GE	0.948	0.885	0.7				
GDP	0.874	0.853	0.617	0.858			
EDU	0.461	0.735	0.47	0.561	0.468		
EE	0.896	0.879	0.655	0.931	0.817	0.652	
PO	0.775	0.786	0.71	0.798	0.75	0.537	0.719

Table 2 above displays correlation between various variables which impact extent of corruption in a country. The measures of GE and EE are highly correlated with CPI while IDI also shows significant correlation with CPI. GE and EE measures have highest Pearson correlation value. One of the reason for this high correlation can be the way indicators of these two matrixes are estimated by third party. Both EE and GE indexes included questions on infrastructure, education and healthcare. Also, economic efficiency is the goal of effective governance. The IDI index measure is also highly correlated with GDP, GE and EE. These issues have been kept in mind while building model to avoid misrepresentation of model statistics.

Analysis and results

The central hypothesis of the research is level of ICT development is significant in determining corruption. Past studies have shown that other country specific factors like economic wealth (Guetat 2006), political openness (Torrenz 2002), political stability (Park 2003) and education (Gupta et al.

2002) are also significant antecedent of corruption. These variables would be included as control variables in model. Based on the above discussion final relationship studied is

$$CPI = \beta_0 + \beta_1 * IDI + \beta_2 * GDP + \beta_3 * PO + \beta_4 * PS + \beta_5 * EDU \quad (1)$$

Table 3 Model (1) Results

Variable	Equation (1)		
	Coeff. Estimate	P. Value	VIF
IDI	0.3321	0.014	8.671
PS	0.5851	0	2.156
GDP	5.58E-05	0	4.842
EDU	-0.01897	0.039	2.726
PO (β_5)	0.01713	0.203	3.281
Adj. R Squared	83%		

Table 3 above displays the result of multiple regressions. From the estimates of the coefficient it's clear that IDI impacts correlation negatively. Since, high values of CPI indicates less corruption hence positive significant IDI coefficient implies higher values of IDI leading to lower corruption keeping other factors fixed. Political stability (PS) and economic wealth (GDP/capita) also significantly impacts corruption as measured by CPI and their higher value leads to lesser corruption which is consistent with past studies. Education (EDU) and political openness (PO) are not contributing sufficient information to the model in the presence of other variables however their impact cannot be ignored and their impact needs to be studied separately. Adjusted R Squared value suggests that predictor variables were able to explain 83% of variations in the value of CPI. Variance Inflation Factor (VIF) values show that though there is high correlation between variables but is not problematic as for all coefficients $VIF < 10$, so coefficients can be interpreted correctly. All other assumptions of regression are satisfied too.

Mathematical models for other two hypotheses 2(a) and 2(b) are:

$$GE = \beta_0 + \beta_1 * CPI \quad (2)$$

$$EE = \beta_0 + \beta_1 * CPI \quad (3)$$

Table 4. Model (2) and (3) Analysis

Predictor Variable	Equation (2)		Equation (3)	
	Coefficient Estimate	P. Value	Coefficient Estimate	P. Value
CPI	0.39453	0.0000	0.068490	0.0000
R. Squared	89.9 %		80.2 %	

Form Table 4. it can be said that the GE and EE are significant in determining CPI for a country. In other words low corruption would indicate high government effectiveness and economic efficiency which justifies hypothesis 2 and 3. The amount of variation explained is also very high.

Conclusion and Discussion

This study is an attempt to do a preliminary analysis on the relationship between the level of ICT development on corruption using more balanced and standard measures of complex latent constructs. It is believed that ICT leads to transparency and make people more aware of societal problems. ICT is an umbrella term for IT services and infrastructure. Past studies in this direction have studied specific component or dimension of it like ICT penetration, internet adoption, or e-government maturity. To account for usage and skills required to use ICT, IDI index is used as in indicator for ICT development that is more balanced. The affect of political openness, political stability, education and economic wealth on corruption is also incorporated in the model through balanced and standardizes measures. On analyzing secondary data of 98 countries through multiple regression it is found that level of ICT development is significant in determining corruption in a country, with high level of ICT leading to low corruption and vice versa. Mathematical model explains 83% of variation in corruption across various countries. Impact of political openness on the corruption is not significant in presence of ICT and other control variables. Corruption inside a country explains more than 80% variations in government effectiveness and economic efficiency across various countries.

A major challenge in studies involving corruption is to obtain a reliable measure of related constructs. Primary data collection can be a tough task in politically unstable and poor countries. The surveys related to issues like corruption also suffer from subjectivity bias. Future work in this direction would be to do imputation analysis to improve the data count as measures are highly correlated and missing values can be obtained using their relationships. A methodology to estimate measures from primary data sources could also be formulated. Moreover, IDI index as a measure aggregates most of the ICT attributes but not all may be impacting corruption in the same way. So, researchers can distinguish between impact of a particular ICT type (e.g. internet, telecommunications, IT services etc.) on corruption. Most importantly, our future work will focus on developing a theoretical model which explains the relationship.

REFERENCES

- Akçay, S., 2006. "Corruption and human development," *Cato Journal* (26:1), pp. 29–46.
- Andersen, T. B., 2009. "E-Government as an anti-corruption strategy," *Information Economics and Policy* (21:3), pp. 201-210
- Becker, T., 2001. "Rating the impact of new technologies on democracy," *Communications of the ACM* (44:1), pp. 39–43.
- Castells, M. 2000. "Materials for an exploratory theory of the network society," *The British Journal of Sociology* (51:1), pp. 5–24.
- Charoensukmongkol, P., Moqbel, M. 2014. "Does Investment in ICT Curb or Create More Corruption? A Cross-Country Analysis," *Public Organization Review* (14:1), pp. 51-63.
- Collier, M. W., 2002. "Explaining corruption: An institutional choice approach," *Crime, Law and Social Change* (38:1), pp. 1–31.
- Dahlgren, P., 2005. "The internet, public spheres, and political communication: dispersion and deliberation," *Political Communication* (22:2), pp. 147–162.
- Economy Politics (2010), Economy Politics 2nd annual index of economic efficiency of the world. Retrieved, December 29, 2010, from <http://www.economypolitics.com/>
- Eigen, P., 2002. "Measuring and combating corruption," *Policy Reform* (5:1), pp. 187–201.
- Garibay, M.G., Brande, K. V. D, Gistelink, M.M., Peels, R. and Vidal, M. 2008. "Political Openness : An Assessment of Democracy," *Leuven Centre for Global Governance Studies*, Working Paper No. 14 – May 2008,
- Goel, R. K., Nelson, M. A., and Naretta, M. A., 2012. "The internet as an indicator of corruption awareness," *European Journal of Political Economy* (28:1), pp. 64-75.
- Guetat, I. 2006. "The effects of corruption on growth performance of the MENA countries," *Journal of Economics and Finance* (30:2), pp. 208–221.
- Gupta, S., Davoodi, H., and Alsonso, T. R. 2002. "Does corruption affect income inequality and poverty?" *Economics of Governance* (3:1), pp. 23–45
- Harwit, E., Clark, D., 2001. "Shaping the internet in China: evolution of political control over network infrastructure and content." *Asian Survey* (41:3), pp. 377–408.

- Halkos, G., Tzeremes, N. G. 2010. "Corruption and Economic Efficiency: Panel Data Evidence." *Global Economic Review* (39:4), pp. 441-454
- International Telecommunication Union, 2010. Measuring Information Society – 2010. Retrieved December 29, 2010, from <http://www.itu.int/pub/D-IND-ICTOI-2010>.
- Judge, W. Q., McNat, D. B., and Xu, W. 2011. "The antecedents and effects of national corruption: A Meta Analysis," *Journal of World Business* (46:1), pp. 93–103.
- Kampen, J.K., Snijkers, K., 2003. "E-democracy. A critical evaluation of the ultimate e-dream," *Social Science Computer Review* (21:4), pp. 491–496.
- Krishnan, S., Teo, T. S. H, and Lim, V. K. G. 2013. "Examining the Relationships among E-Government Maturity, Corruption, Economic Prosperity and Environmental Degradation: A Cross-Country Analysis," *Information and Management* (50:8), pp. 638 - 649.
- Lancaster, T., and Montilola, G. 1997. "Toward a methodology for the comparative study of political corruption," *Crime, Law & Social Change* (27:3), pp. 185–206.
- Lio, M. C., Liu, M. C., and Ou, Y. P. 2011. "Can the internet reduce corruption? a cross-country study based on dynamic panel data models," *Government Information Quarterly* (28:1), pp. 47–53
- Lui, F. T. 1985. "An Equilibrium Queuing Model of Bribery Games," *Journal of Political Economy* (93:4), pp. 760–781
- Mahmood, R. 2004. "Can information and communication technology help reduce corruption? How so and why not: Two case studies from South Asia," *Perspectives on Global Development and Technology* (3:3), pp. 347–373.
- Marieta, M., and Alin, O. 2013. "The public sector efficiency from perspective of the corruption phenomenon," *Revista Economica* (65:1), pp. 38-49.
- Park, H. 2003. "Determinants of corruption: A cross-national analysis," *Multinational Business Review* (11:2), pp.29–48.
- Salih, O., Eldin, K. 2013. "The roots and causes of the 2011 Arab uprisings," *Arab Studies Quarterly* (35:2), pp 184- 206.
- Serra, D. 2006. "Empirical determinants of corruption: A sensitivity analysis," *Public Choice* (126:1), pp-225–256
- Shirazi, F., Ngwenyama, O. and Morawczynski, O. 2010. "ICT expansion and the digital divide in democratic freedoms: an analysis of the impact of ICT expansion, education and ICT filtering on democracy," *Telematics and Informatics* (27:1), pp. 21–31
- The Worldwide Governance Indicators (WGI) project 2010. Retrieved December 29, 2014 from <http://info.worldbank.org/governance/wgi>
- Torrez, J. 2002. "The effect of openness on corruption," *Journal of International Trade & Economic Development* (11:4), pp. 387–403.
- Transparency International 2010. The Corruption Perception Index – 2010. Retrieved December 29, 2014, from <http://www.transparency.org>
- USAID 1999. Handbook on fighting corruption. Washington DC. Retrieved December 29, 2014, from http://pdf.usaid.gov/pdf_docs/Pnace070.pdf
- United Nations Global Compact 2011, *Business against Corruption: A Framework for Action*, pp-6. Retrieved from http://www.unglobalcompact.org/docs/news_events/8.1/bac_fin.pdf
- United Nations Global Compact 2010 *Fighting Corruption in the Supply Chain: A Guide for Customers and Suppliers* ,pp- 12. Retrieved from http://www.unglobalcompact.org/docs/issues_doc/Anti-Corruption/Fighting_Corruption_Supply_Chain.pdf
- World Bank Open Data 2010. Retrieved December 29, 2014, from <http://data.worldbank.org/>

Appendix: List of 98 countries used in the study

1	ALBANIA	34	GHANA	67	NORWAY
2	ALGERIA	35	GREECE	68	OMAN
3	ARGENTINA	36	GUYANA	69	PAKISTAN
4	AUSTRALIA	37	HONDURAS	70	PANAMA
5	AUSTRIA	38	HUNGARY	71	PARAGUAY

6	AZERBAIJAN	39	INDIA	72	PERU
7	BAHRAIN	40	INDONESIA	73	PHILIPPINES
8	BELGIUM	41	IRAN, ISLAMIC REP.	74	POLAND
9	BENIN	42	IRELAND	75	PORTUGAL
10	BOLIVIA	43	ISRAEL	76	ROMANIA
11	BOTSWANA	44	ITALY	77	RUSSIAN FEDERATION
12	BRAZIL	45	JAMAICA	78	RWANDA
13	BULGARIA	46	JAPAN	79	SENEGAL
14	BURKINA FASO	47	JORDAN	80	SINGAPORE
15	CAMEROON	48	KAZAKHSTAN	81	SLOVAK REPUBLIC
16	CANADA	49	KENYA	82	SLOVENIA
17	CHILE	50	LATVIA	83	SOUTH AFRICA
18	CHINA	51	LITHUANIA	84	SPAIN
19	COLOMBIA	52	MADAGASCAR	85	SRI LANKA
20	COSTA RICA	53	MALAWI	86	SWEDEN
21	CROATIA	54	MALAYSIA	87	SWITZERLAND
22	CZECH REPUBLIC	55	MALI	88	SYRIAN ARAB REPUBLIC
23	DENMARK	56	MAURITANIA	89	TANZANIA
24	DOMINICAN REPUBLIC	57	MAURITIUS	90	THAILAND
25	ECUADOR	58	MEXICO	91	TUNISIA
26	EGYPT, ARAB REP.	59	MONGOLIA	92	TURKEY
27	EL SALVADOR	60	MOROCCO	93	UGANDA
28	ESTONIA	61	NAMIBIA	94	UKRAINE
29	ETHIOPIA	62	NEPAL	95	UNITED KINGDOM
30	FINLAND	63	NETHERLANDS	96	URUGUAY
31	FRANCE	64	NEW ZEALAND	97	VIETNAM
32	GEORGIA	65	NICARAGUA	98	ZAMBIA
33	GERMANY	66	NIGERIA		