

Governance Matters IV: Updated Data and New Results for 1996-2004

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**New Report, part of the Governance Indicators
research Project (and 'Governance Matters' series) initiated
in the late 1990's by Kaufmann & Kraay.**

**The Governance Databank, currently covering 209 countries
and territories during 1996-2004, and the analytical and
methodological papers, can be accessed at:**

www.worldbank.org/wbi/governance

Main Messages

- **Updated dataset: 6 dimensions of governance for 209 countries**
 - more data sources, increased precision
- **Yet margins of error in governance estimates remain**
 - incorporate when comparing countries and over time
 - Not unique to our aggregate ‘subjective’ indicators
- **Changes in governance over time 1996-2004**
 - Have occurred in some countries, not worldwide
 - Are these changes are significant?: *new method*
- **How useful are ‘perceptions’-data on governance?**
- **What is the “development dividend” of good governance, and is a ‘poverty discount’ warranted?**
- **What are the salient implications for data and policy work?**

Six Dimensions of Governance

Governance as the set of traditions and institutions by which authority in a country is exercised – specifically:

- **The process by which those in authority are selected and replaced**
 - **VOICE AND ACCOUNTABILITY**
 - **POLITICAL STABILITY & ABSENCE OF VIOLENCE/TERRORISM**
- **The capacity of government to formulate and implement policies**
 - **GOVERNMENT EFFECTIVENESS**
 - **REGULATORY QUALITY**
- **The respect of citizens and state for institutions that govern interactions among them**
 - **RULE OF LAW**
 - **CONTROL OF CORRUPTION**

Governance Data

- **“Perceptions” data on governance from 37 different sources constructed by 31 different organizations**
 - 12 new data sources for 2004
 - Use new data for minor backwards revisions for 1996-2002
- **Data sources include cross-country surveys of firms, commercial risk-rating agencies, think-tanks, government agencies, international organizations, etc.**
- **352 proxies for various dimensions of governance**
- **Organize these measures into six clusters corresponding to definition of governance, for five periods: 1996, 1998, 2000, 2002, 2004**

Sources of Governance Data

- **Cross-Country Surveys of Firms: Global Competitiveness Survey, World Business Environment Survey, World Competitiveness Yearbook, BEEPS**
- **Cross-Country Surveys of Individuals: Gallup International Voice of the People, Latinobarometro, Afrobarometer, *Vanderbilt University/USAID***

Sources of Governance Data, Cont'd

- **Expert Assessments from Commercial Risk Rating Agencies:** DRI, PRS, EIU, World Markets Online, *Merchant International Group, IJET Travel Consultancy, PERC*
- **Expert Assessments from NGOs, Think Tanks:** Reporters Without Borders, Heritage Foundation, Freedom House, Amnesty International, *Bertelsmann Foundation, Fundar, International Research and Exchanges Board, Brown University, Columbia University, Binghamton University*
- **Expert Assessments from Governments, Multilaterals:** World Bank CPIA, EBRD, *AFDB, ADB, UNECA*, State Dept. Human Rights Report

Data Sources for Governance Indicators 2004

African Development Bank	Country Policy & Institutional Assessments	Poll
Afrobarometer	Afrobarometer Survey	Survey
Asian Development Bank	Country Policy & Institutional Assessments	Poll
Bertelsmann Foundation	Bertelsmann Transformation Index	Poll
Brown University's Center for Public Policy	Global E-Governance	Poll
Business Environment Risk Intelligence	Business Risk Service	Poll
Business Environment Risk Intelligence	Qualitative Risk Measure	Poll
Columbia University	State Capacity Project	Poll
Economist Intelligence Unit	Country Risk Service	Poll
European Bank for Reconstruction & Development	Transition Report	Poll
Freedom House	Countries at the Crossroads	Poll
Freedom House	Nations in Transition	Poll
Freedom House	Freedom in the World	Poll
Furnar	Index of Budget Transparency	Survey
Gallup International	Gallup Millennium Survey	Survey
Gallup International	50th Anniversary Survey	Survey
Gallup International	Voice of the People Survey	Survey
Global Insight's DRI McGraw-Hill	Country Risk Review	Poll
Heritage Foundation/Wallstreet Journal	Economic Freedom Index	Poll

Data Sources for 2004, *Cont'd*

IJET Travel Intelligence	Country Security Risk Assessment	Poll
Institute for Management and Development	World Competitiveness Yearbook	Survey
International Research & Exchanges Board	Media Sustainability Index	Poll
Latinobarometro	Latinobarometro Surveys	Survey
Merchant International Group	Gray Area Dynamics	Poll
Political & Economic Risk Consultancy	Corruption Survey	Survey
Political Risk Services	International Country Risk Guide	Poll
PriceWaterhouseCoopers	Opacity Index	Survey
Reporters Without Borders	Reporters Without Borders	Poll
State Department / Amnesty International	Human Rights Dataset	Poll
United Nations Economic Commission for Africa	Africa Governance Indicators	Poll
USAID / Vanderbilt University	Democracy Surveys in Central America	Survey
World Bank	Business Enterprise Environment Survey	Survey
World Bank	World Business Environment Survey	Survey
World Bank	Country Policy & Institutional Assessments	Poll
World Economic Forum	Global Competitiveness Report	Survey
World Economic Forum	Africa Competitiveness Report	Survey
World Markets Research Center	World Markets Online	Poll

Examples of Governance Questions

1. Expert assessment polls

- Government interfere w/ private investment? (RQ)
- How transparent and fair is the legal system? (RL)
- Risk of coup, civil war, org. crime, terrorism? (PV)
- How severe is the bureaucratic red tape? (RQ)
- What is risk of loss of FDI due to corruption? (CC)
- Freedom of the press, expression, association (VA)

2. Survey Responses

- % bribery “to get things done”? (CC)
- Transparent info given by government? (GE)
- % Management Time spent on red tape? (RQ)
- Access & quality of government services? (GE)

Why Aggregate Indicators?

Basic Premise: *individual data sources provide a noisy “signal” of broader concept of governance, e.g.:*

- trust in police → RULE OF LAW
- freedom of press → VOICE & ACC'TBILITY
- policy consistency → GOV'T EFFECTIVENESS

Benefits of Aggregation -- *through the U.C. Method*

- aggregate indicators are more informative about broad concepts of governance
- broader country coverage than individual indicator
- generate explicit margins of error for country scores

Building Aggregate Governance Indicators

- Use Unobserved Components Model (UCM) to construct composite governance indicators, and margins of error for each country
- Estimate of governance: *weighted average* of observed scores for each country, re-scaled to common units
- Weights are proportional to *precision* of underlying data sources
- Precision depends on how strongly individual sources are correlated with each other
- Margins of error reflect (a) *number of sources* in which a country appears, and (b) the *precision of those sources*

Unobserved Components Model

- Observed indicator k of governance in country j , $y(j,k)$, is noisy indicator of true governance in country j , $g(j)$:

$$y(j,k) = \alpha(k) + \beta(k) \cdot (g(j) + \varepsilon(j,k))$$

- Variance in measurement errors is same across countries for each source, but different across sources:

$$E[\varepsilon(j,k)^2] = \sigma_{\varepsilon}^2(k)$$

- ***Identifying assumption:*** Measurement errors are uncorrelated across sources \Rightarrow highly correlated sources measure governance with more precision

Estimates of Governance from UCM

- UCM allows us to infer the distribution of governance in a country conditional on the observed data for that country

$$E[g(j) | y(j,1), \dots, y(j, K(j))] = \sum_{k=1}^{K(j)} w(k) \cdot \frac{y(j,k) - \alpha(k)}{\beta(k)}$$

- Best estimate of governance is the *mean* of this conditional distribution:

$$w(k) = \frac{\sigma_{\varepsilon}(k)^{-2}}{1 + \sum_{k=1}^{K(j)} \sigma_{\varepsilon}(k)^{-2}}$$

- So estimate of governance is *weighted average of re-scaled scores*, with weights proportional to precision of each source:

Precision of Estimates from UCM

- **Reliability or precision of estimate of governance for each country is the standard deviation of this conditional distribution:**

$$SD[g(j) | y(j,1), \dots, y(j, K(j))] = \left(1 + \sum_{k=1}^{K(j)} \sigma_{\varepsilon}(k)^{-2} \right)^{-\frac{1}{2}}$$

- **These standard errors are smaller for countries that (a) appear in *more* sources, and/or (b) appear in *more reliable* sources**

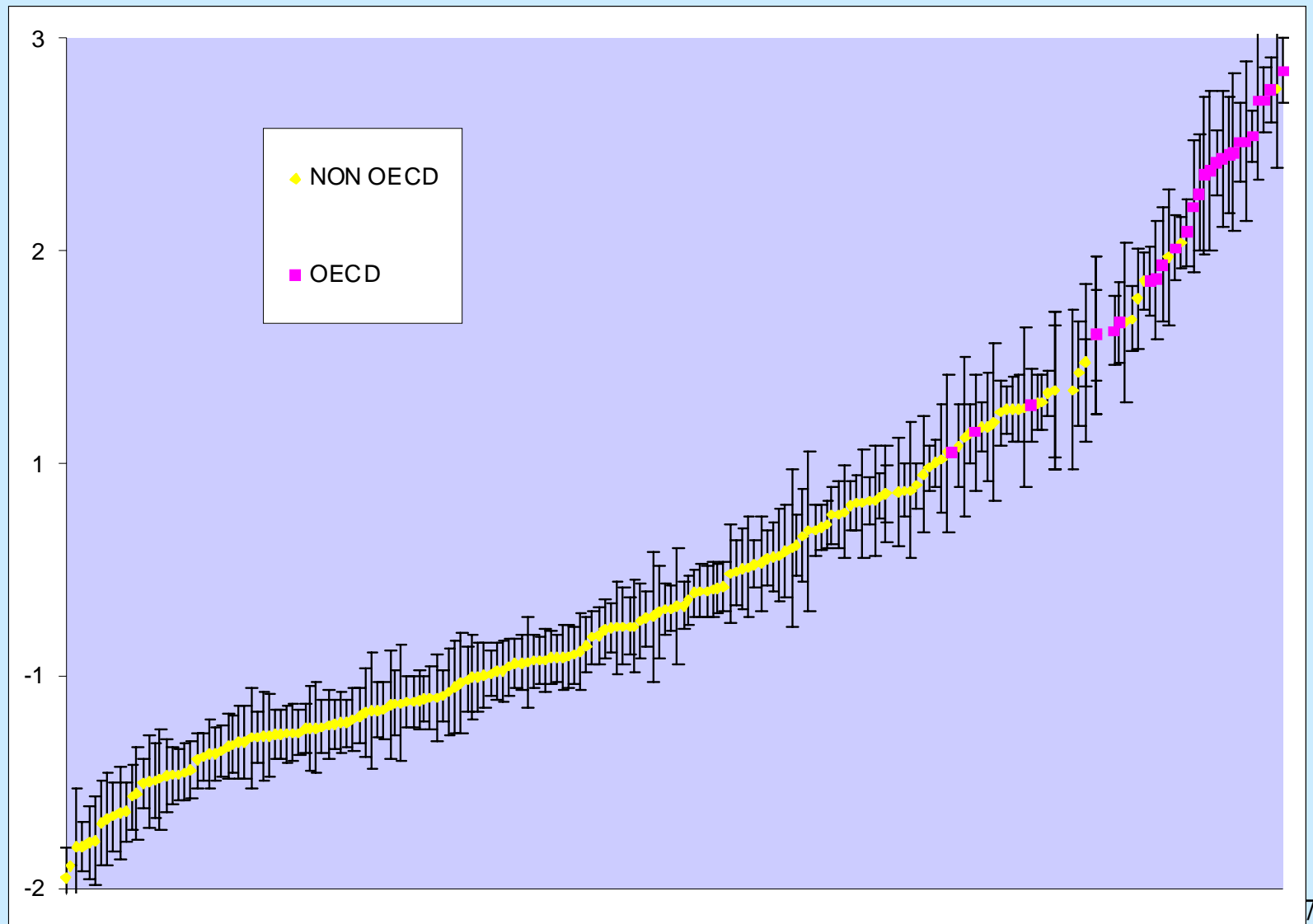
Estimating Unobserved Components Model

- Distinguish between *representative* and *non-representative sources*
- For representative sources, estimate parameters $\alpha(k)$, $\beta(k)$, and $\sigma_{\varepsilon}(k)$ using maximum likelihood
- Construct initial estimate of governance using representative sources only
- For non-representative sources, estimate parameters by regressing each source on initial estimate of governance
- Construct final estimate of governance using all sources

Levels of Governance Worldwide, 1996-2004

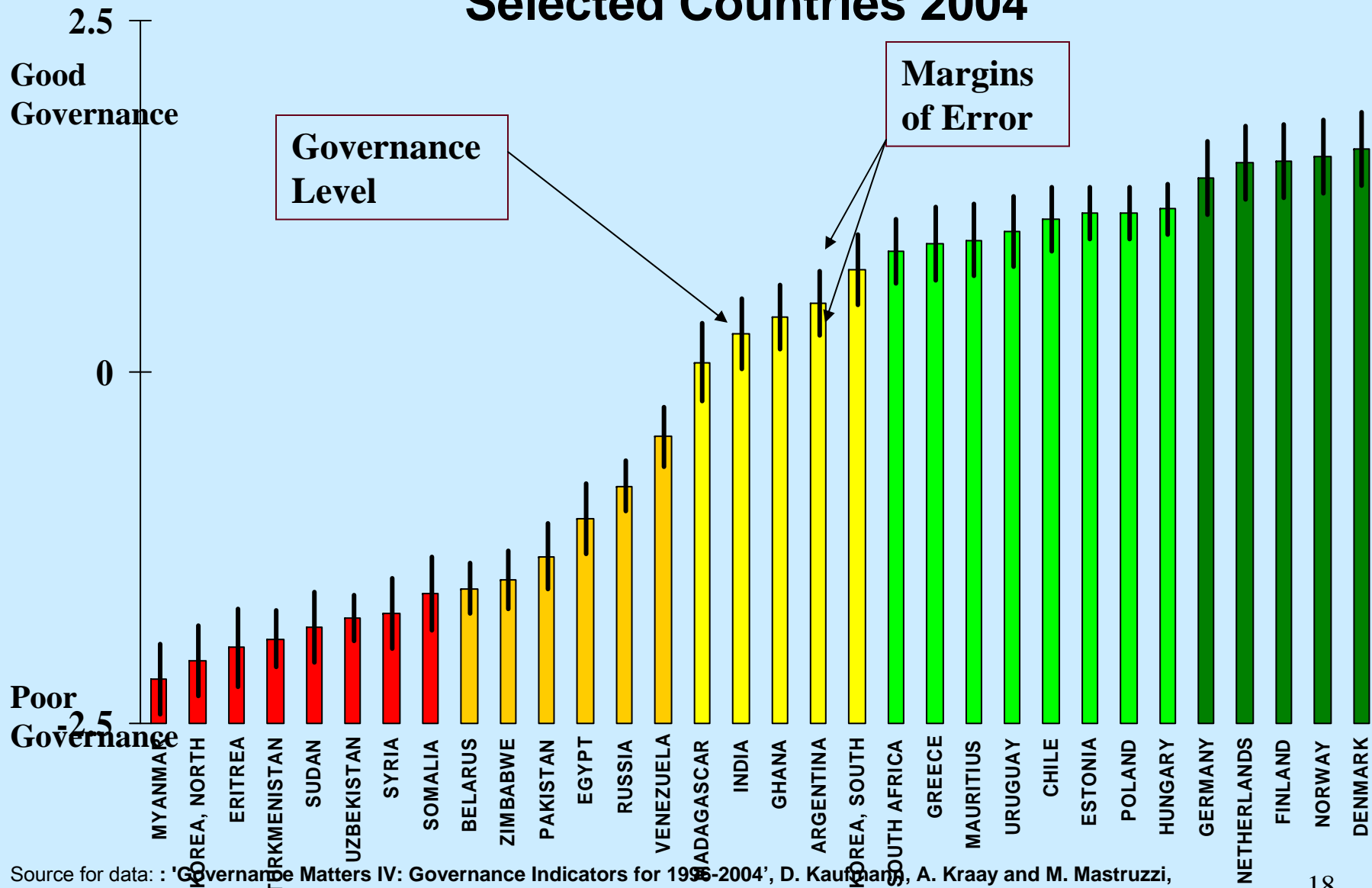
- Estimates of governance for 209 countries
- Assess the *precision* of these estimates, using standard errors generated by UCM
 - Simple rule of thumb: cross-country differences in governance significant if 90% confidence regions don't overlap
- Precision of governance indicators has improved over time with more, and better, data sources
 - e.g. MCA eligibility requires countries *above median* on Control of Corruption
 - 2004 KK data: 33% of countries significantly above (at 90% confidence level)--*much improved*
 - Single source: less than 10% of countries are significantly above median (at 90% confidence)

Control of Corruption in 2004



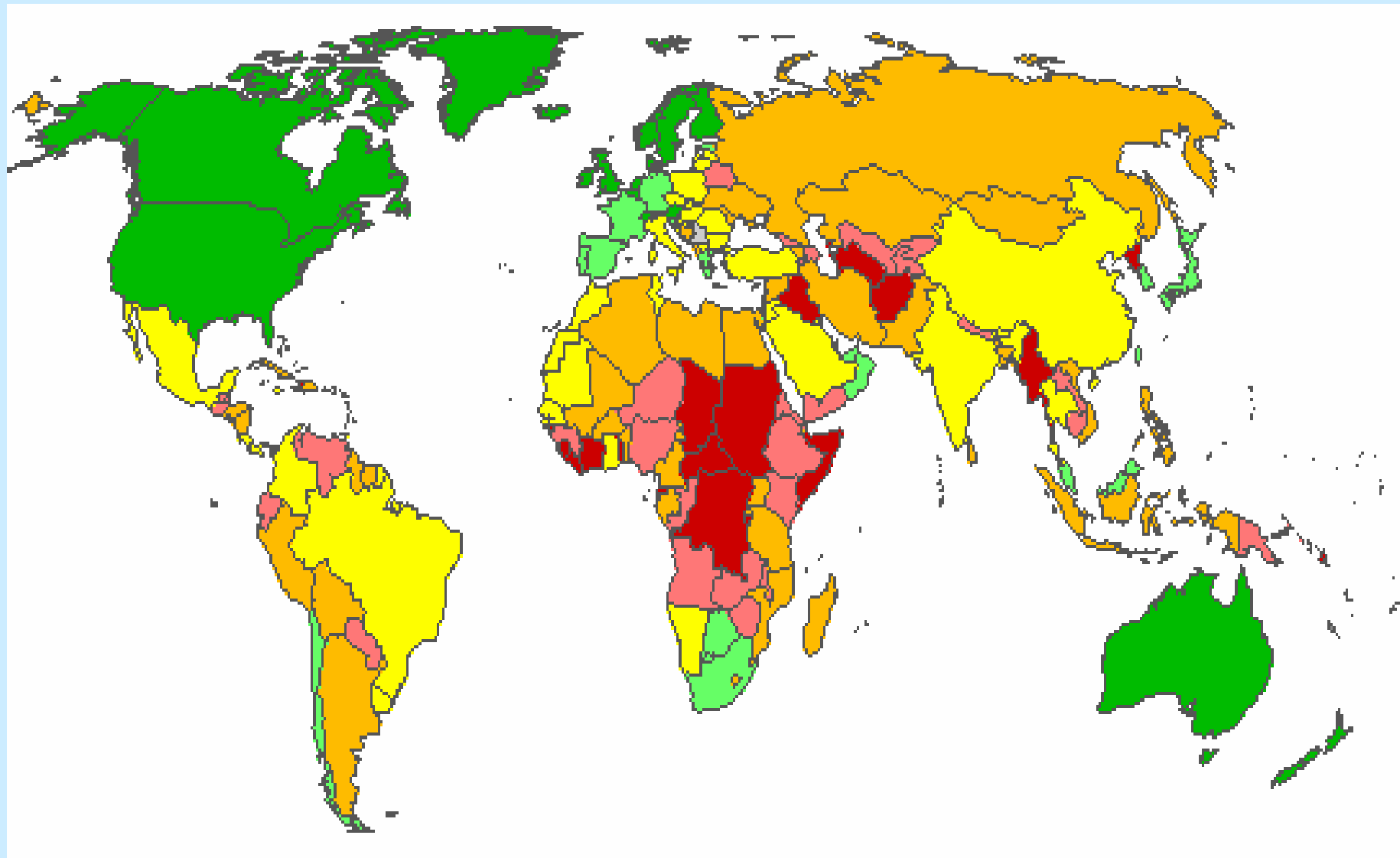
Voice & Accountability

Selected Countries 2004



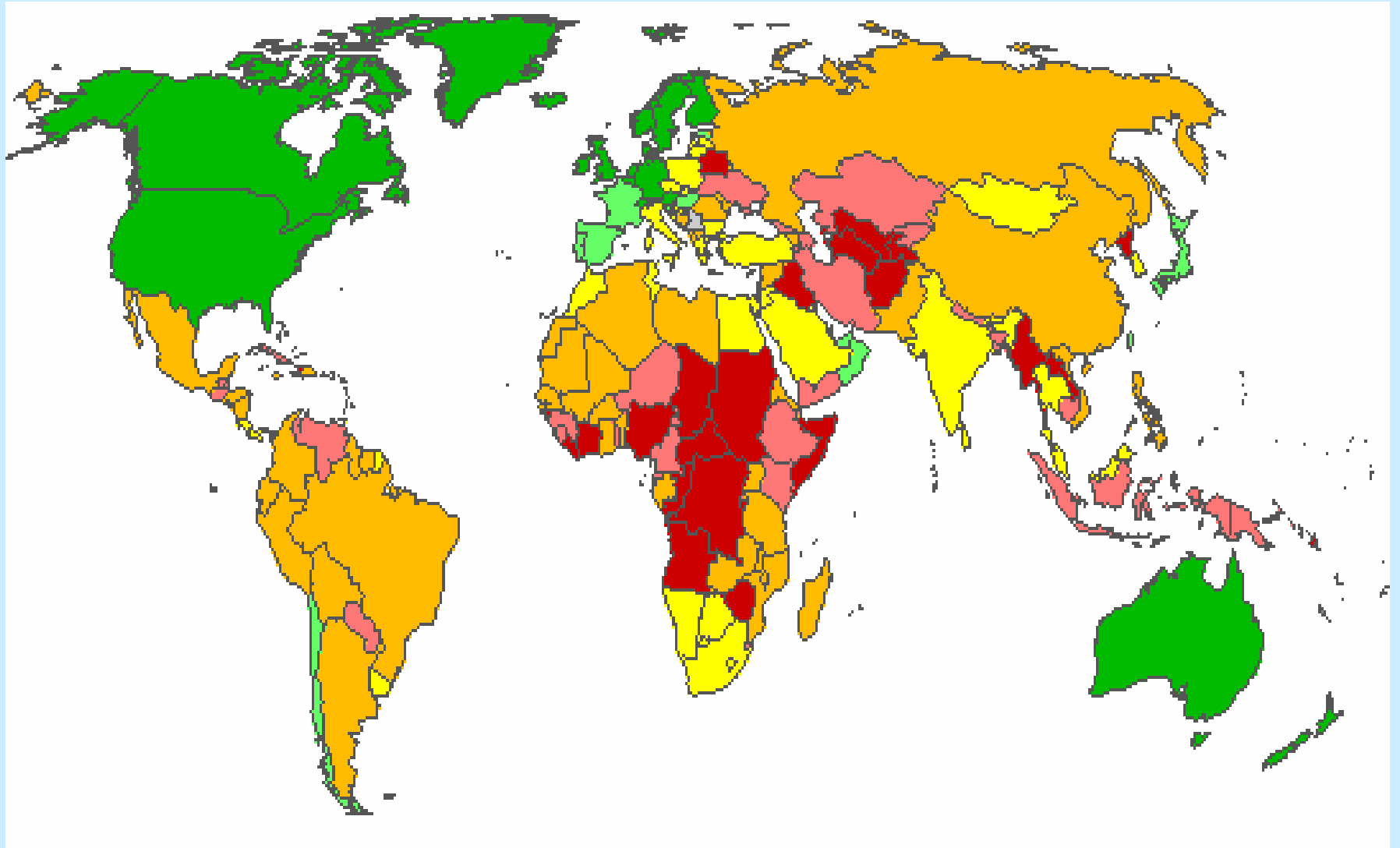
Source for data : 'Governance Matters IV: Governance Indicators for 1996-2004', D. Kaufmann, A. Kraay and M. Mastruzzi, (<http://www.worldbank.org/wbi/governance/govdata>); Colors are assigned according to the following criteria: Dark Red, bottom 10th percentile rank; Light Red between 10th and 25th; Orange, between 25th and 50th; Yellow, between 50th and 75th; Light Green between 75th and 90th; Dark Green above 90th.

Government Effectiveness, 2004: World Map



Source for data: : 'Governance Matters IV: Governance Indicators for 1996-2004', D. Kaufmann, A. Kraay and M. Mastruzzi, (<http://www.worldbank.org/wbi/governance/govdata>); Colors are assigned according to the following criteria: Dark Red, bottom 10th percentile rank; Light Red between 10th and 25th; Orange, between 25th and 50th; Yellow, between 50th and 75th; Light Green between 75th and 90th; Dark Green above 90th.

Rule of Law, 2004: World Map

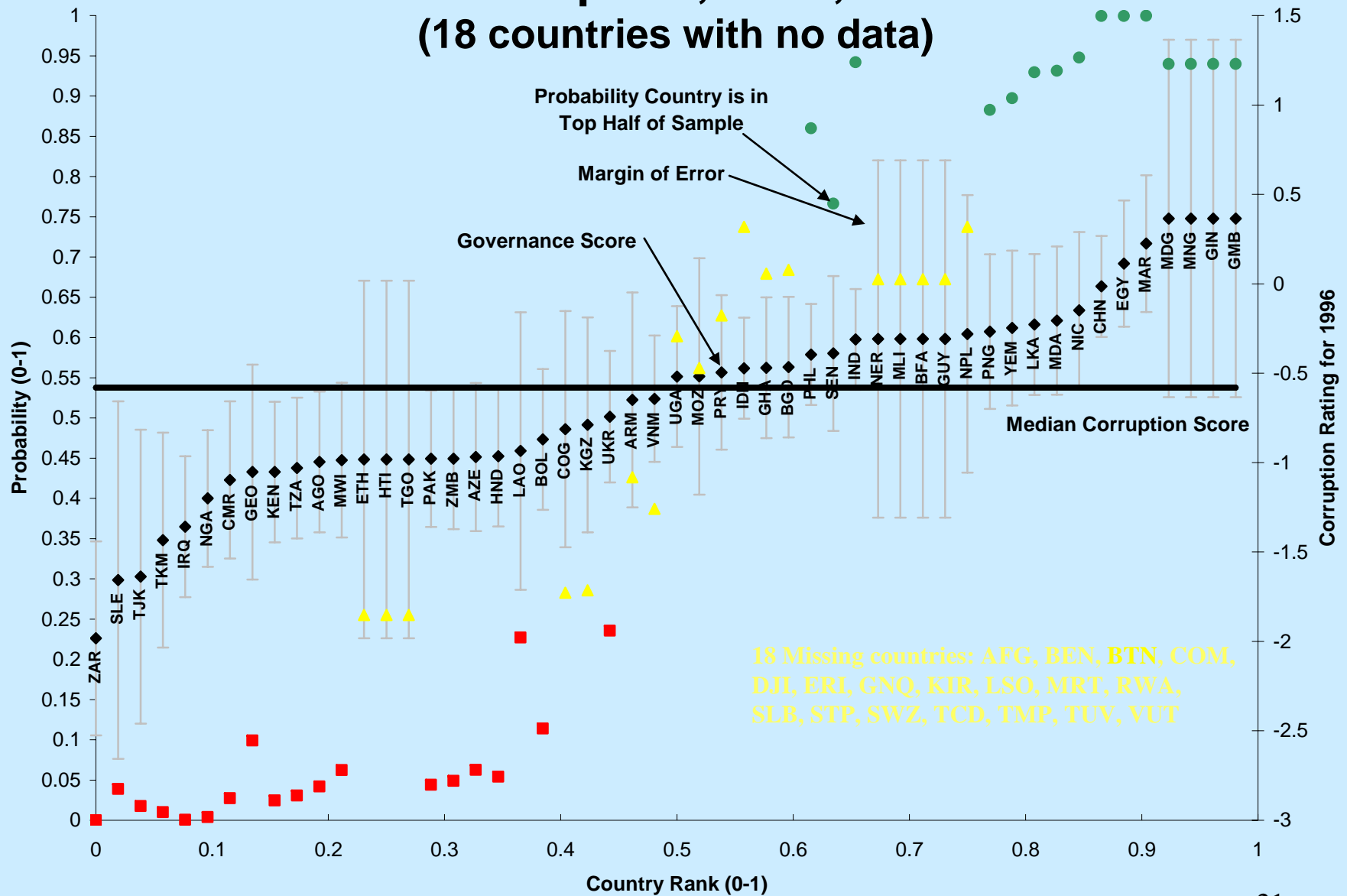


Source for data : 'Governance Matters IV: Governance Indicators for 1996-2004', D. Kaufmann, A. Kraay and M. Mastruzzi, (<http://www.worldbank.org/wbi/governance/govdata>); Colors are assigned according to the following criteria: Dark Red, bottom 10th percentile rank; Light Red between 10th and 25th; Orange, between 25th and 50th; Yellow, between 50th and 75th; Light Green between 75th and 90th; Dark Green above 90th.

Application: MCA Eligibility Criteria

Control of Corruption, 1996, 52 Countries

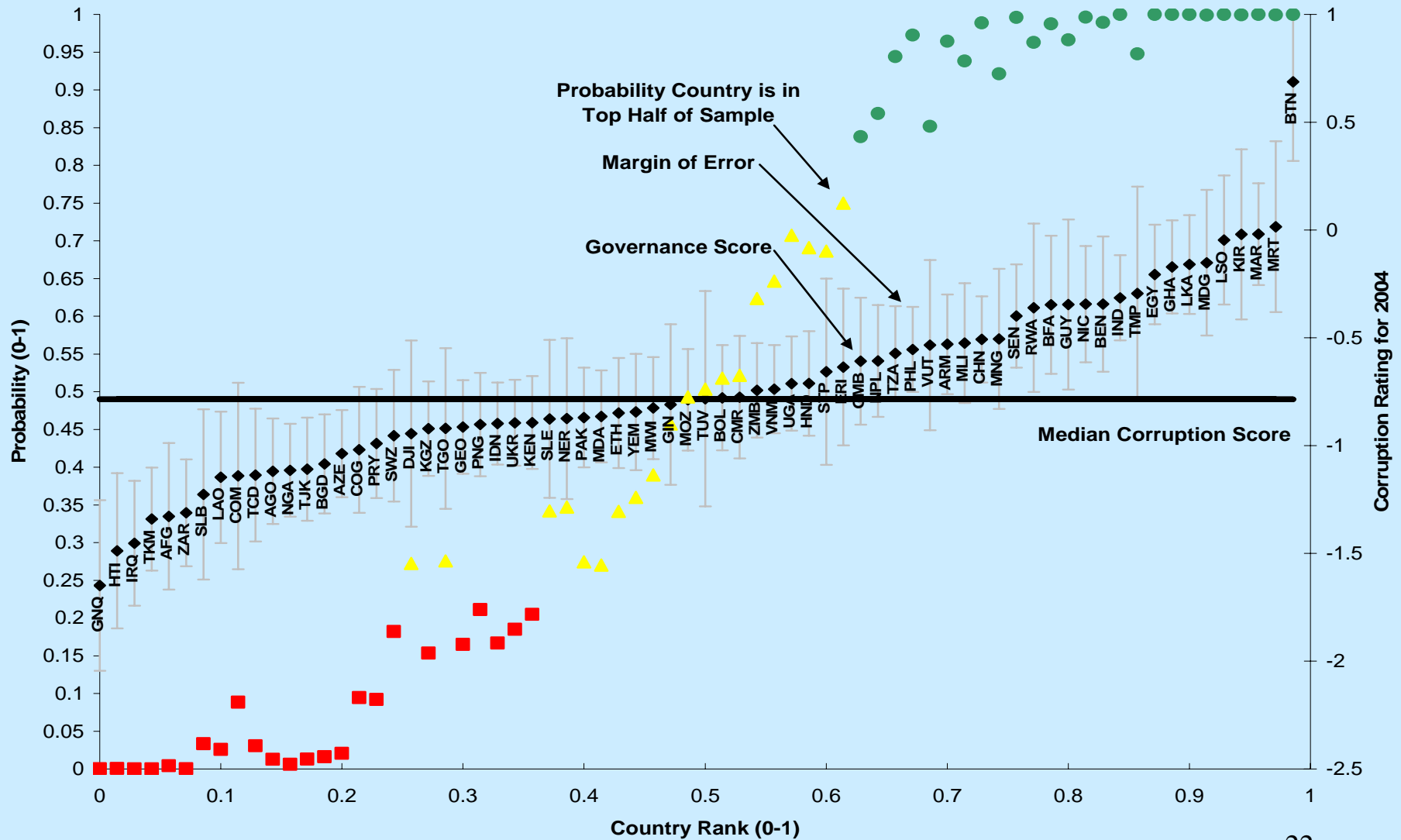
(18 countries with no data)



15 countries (green) have a probability of 75% or above to be in the top half; 19 countries (red) have a probability of 25% or less to be in the top half; 18 countries (yellow) have a probability between 25% and 75% to be in the top half.

Application: MCA Eligibility Criteria

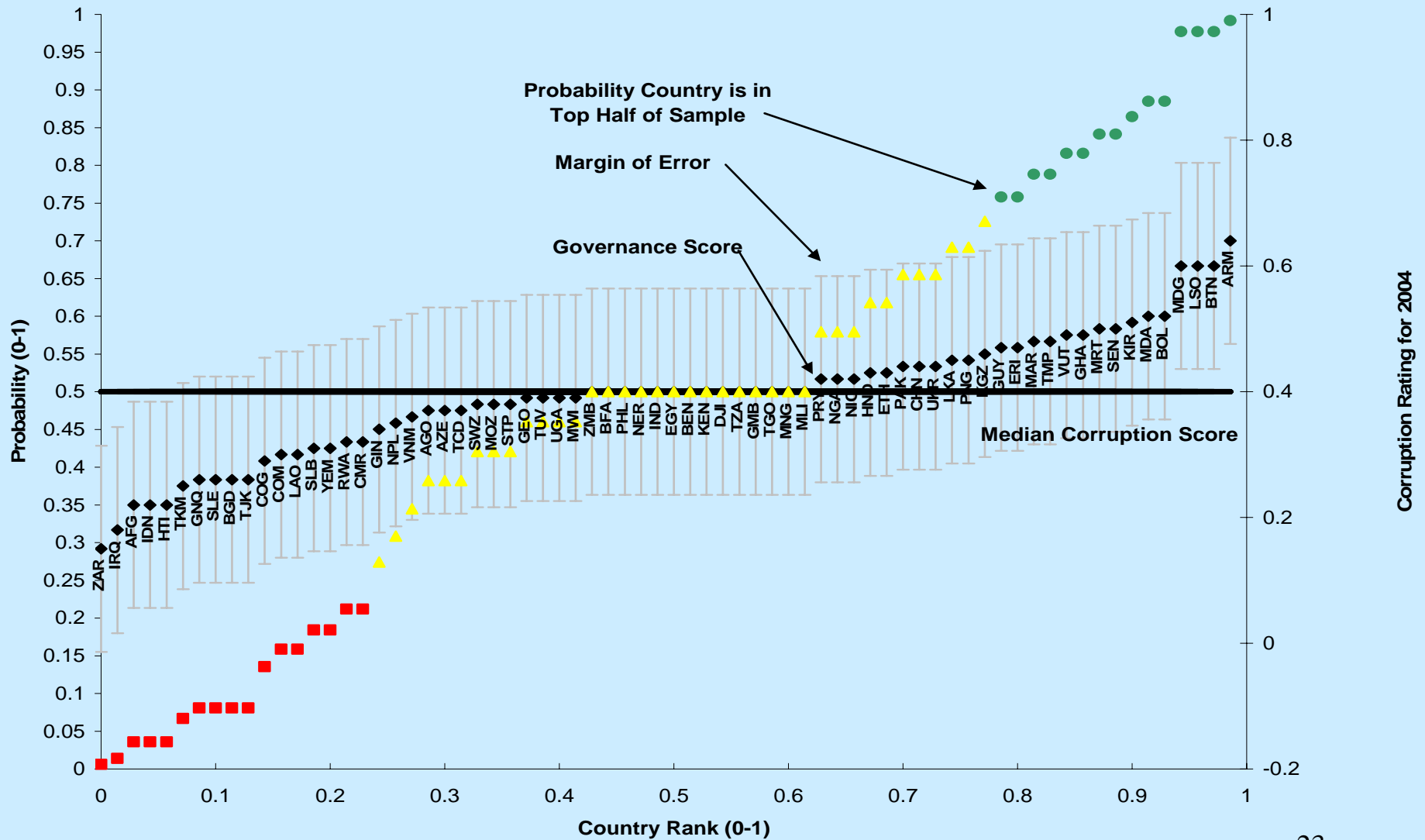
Control of Corruption, 2004, 70 Countries



26 countries (green) have a probability of 75% or above to be in the top half; 24 countries (red) have a probability of 25% or less to be in the top half; 20 countries (yellow) have a probability between 25% and 75% to be in the top half.

Application: MCA Eligibility Criteria

Control of Corruption, WMO 2004, 70 Countries



15 countries (green) have a probability of 75% or above to be in the top half; 17 countries (red) have a probability of 25% or less to be in the top half; 38 countries (yellow) have a probability between 25% and 75% to be in the top half.

New Results on Statistical Inference About Changes in Governance over Time

- Individual and aggregate indicators provide a noisy “signal” of governance, which is fundamentally *unobservable*
- When do changes in *observed* data signal statistically significant change in *unobserved* governance?
- Two complications:
 1. Governance is persistent over time → observed changes in data overstate actual changes in governance
 2. Measurement error is *persistent* over time → observed changes in data understate actual changes in governance
- Our estimates suggest that first effect dominates → actual changes in governance about half as large as observed changes

Inference About Changes over Time

- **Two-period unobserved components model:**

$$y(j, k, t) = \alpha(k, t) + \beta(k, t) \cdot (g(j, t) + \varepsilon(j, k, t))$$

- **Key complications: persistence in governance and errors**

$$E[g(j, t) \cdot g(j, t - 1)] = \rho$$

$$E[\varepsilon(j, k, t) \cdot \varepsilon(j, k, t - 1)] = r_k \cdot \sigma(k, t) \cdot \sigma(k, t - 1)$$

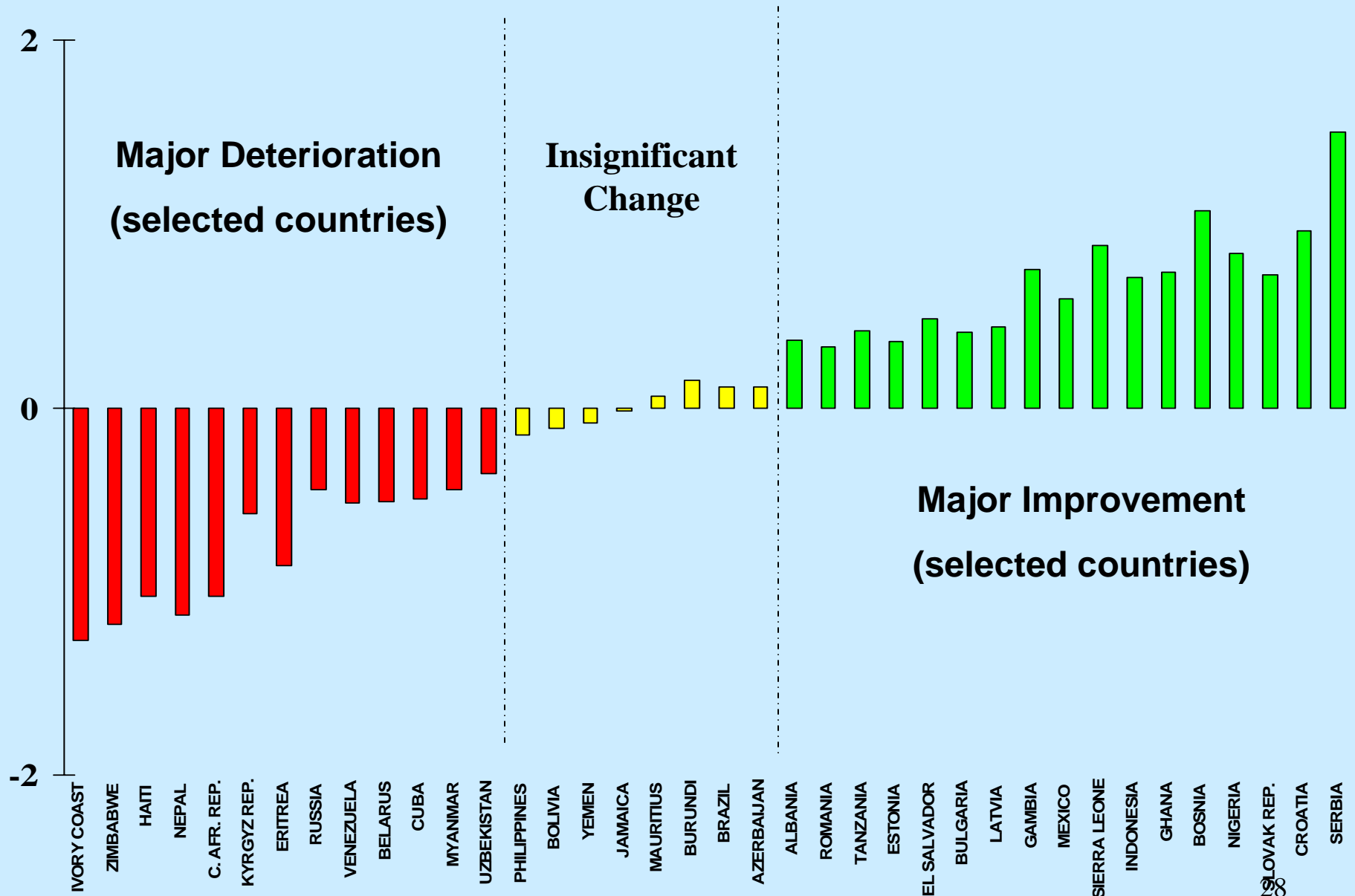
Inference About Changes, Cont'd

- **assume governance and error terms are jointly normal**
- **obtain joint distribution of governance in two periods, $g(j,t)$, $g(j,t-1)$, conditional on observed data for country j**
- **as with one-period UCM, use mean of this conditional distribution as estimate of governance, variance for margins of error**
- **can also obtain distribution of change, $g(j,t) - g(j,t-1)$, use conditional mean and variance for inference about changes**

Changes Over Time in Governance

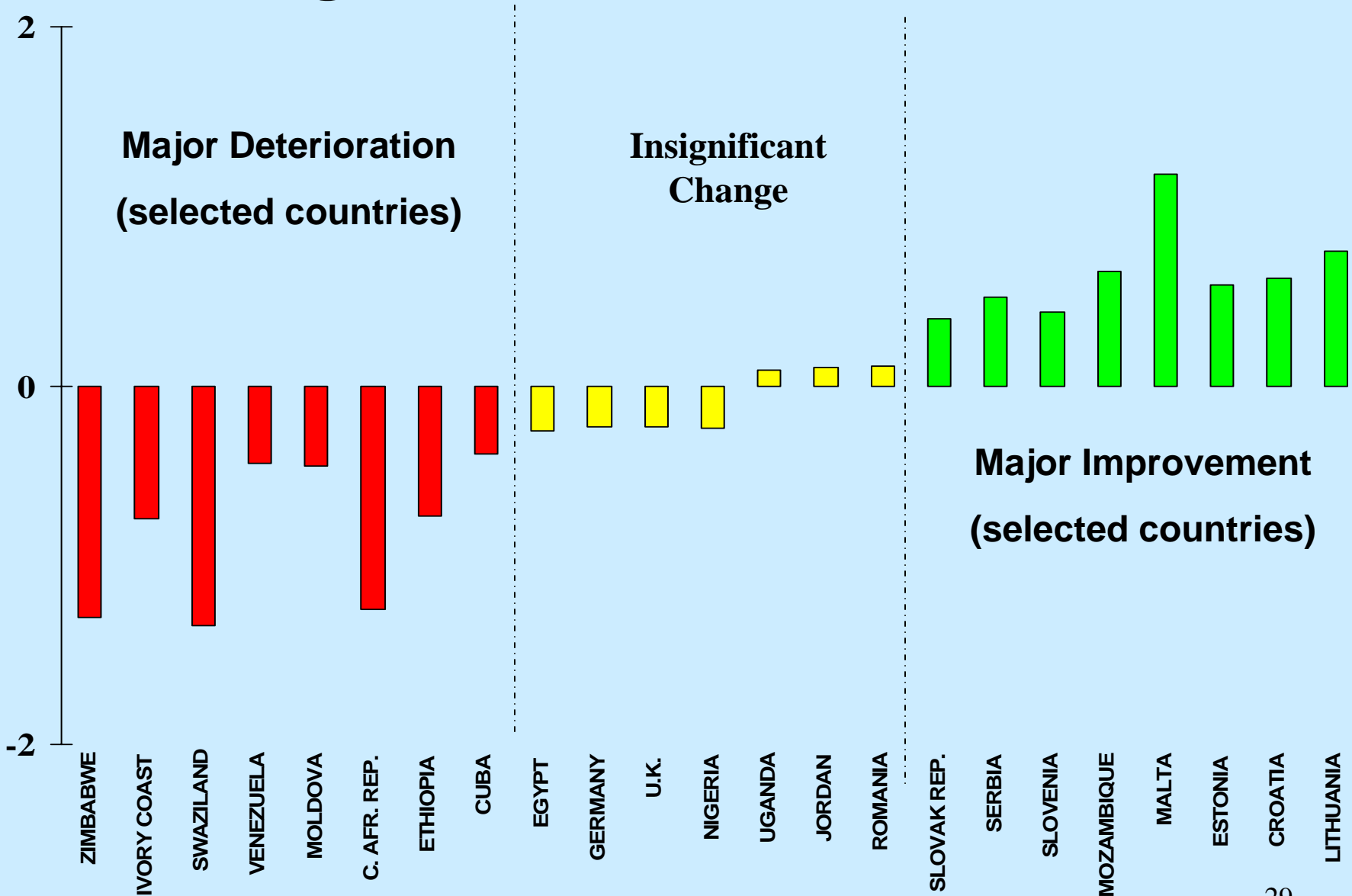
- **Many changes in governance are small relative to margins of error – even over eight-year period 1996-2004**
- **But substantial improvements/worsening in some countries**
 - **Rule of Thumb: changes over time are significant if 90% (or 75%) confidence intervals don't overlap**
 - **Formal statistical inference about changes over time**
- **Individual data sources suggest no evidence of improvements in governance worldwide**

Changes in Voice and Accountability, 96-04



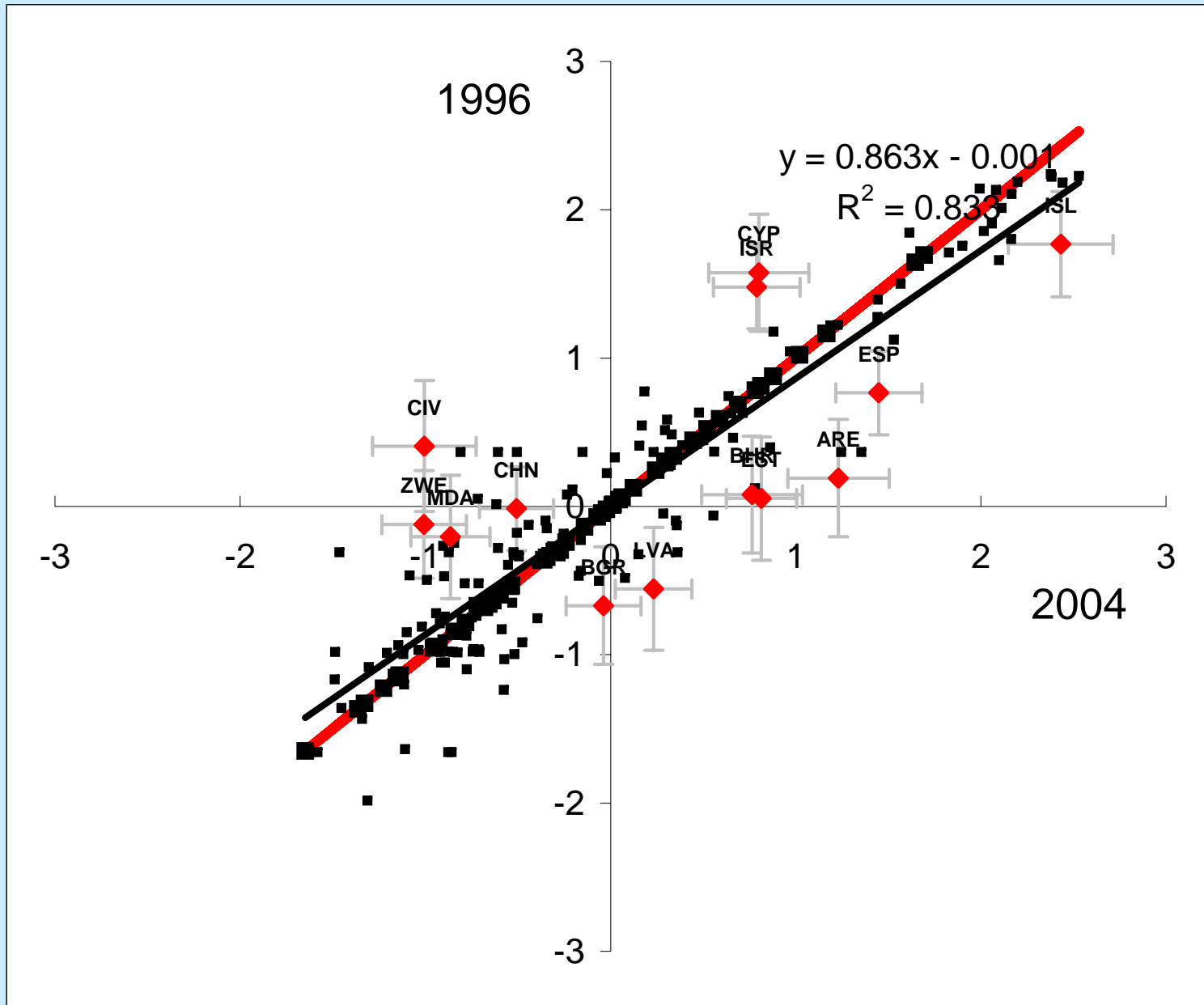
Changes were calculated on the basis of the differences in country estimates from 1996 and 2004. Classification for major deteriorations and improvements were based on 75% confidence interval. Source for data: <http://www.worldbank.org/wbi/governance/govdata/>.

Changes in Rule of Law, 1996-2004



Changes were calculated on the basis of the differences in country estimates from 1996 and 2004. Classification for major deteriorations and improvements were based on 75% confidence interval. Source for data: <http://www.worldbank.org/wbi/governance/govdata/>.

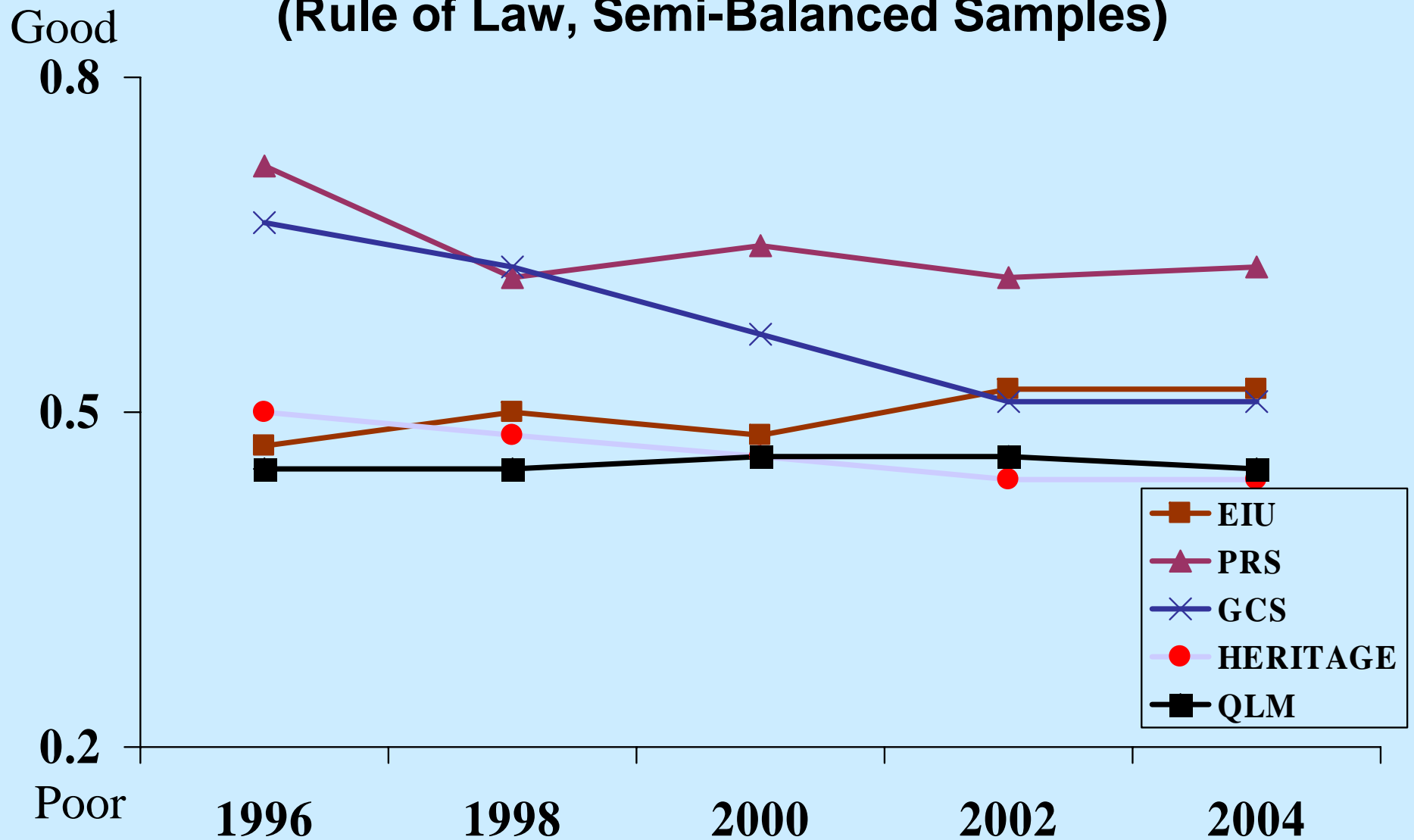
Changes in Control of Corruption, 1996-2004



Measurable Worldwide Trends in Governance?

- Through new method, it was possible to determine that changes can take place in the short-term: in 6-to-8 years, not only deteriorations but *some* significant improvements as well
- Yet has the world on average improve on governance over the period?
- We look at this question next, which matters for interpretation of our governance indicators ratings -- since our aggregate indicators are in relative units

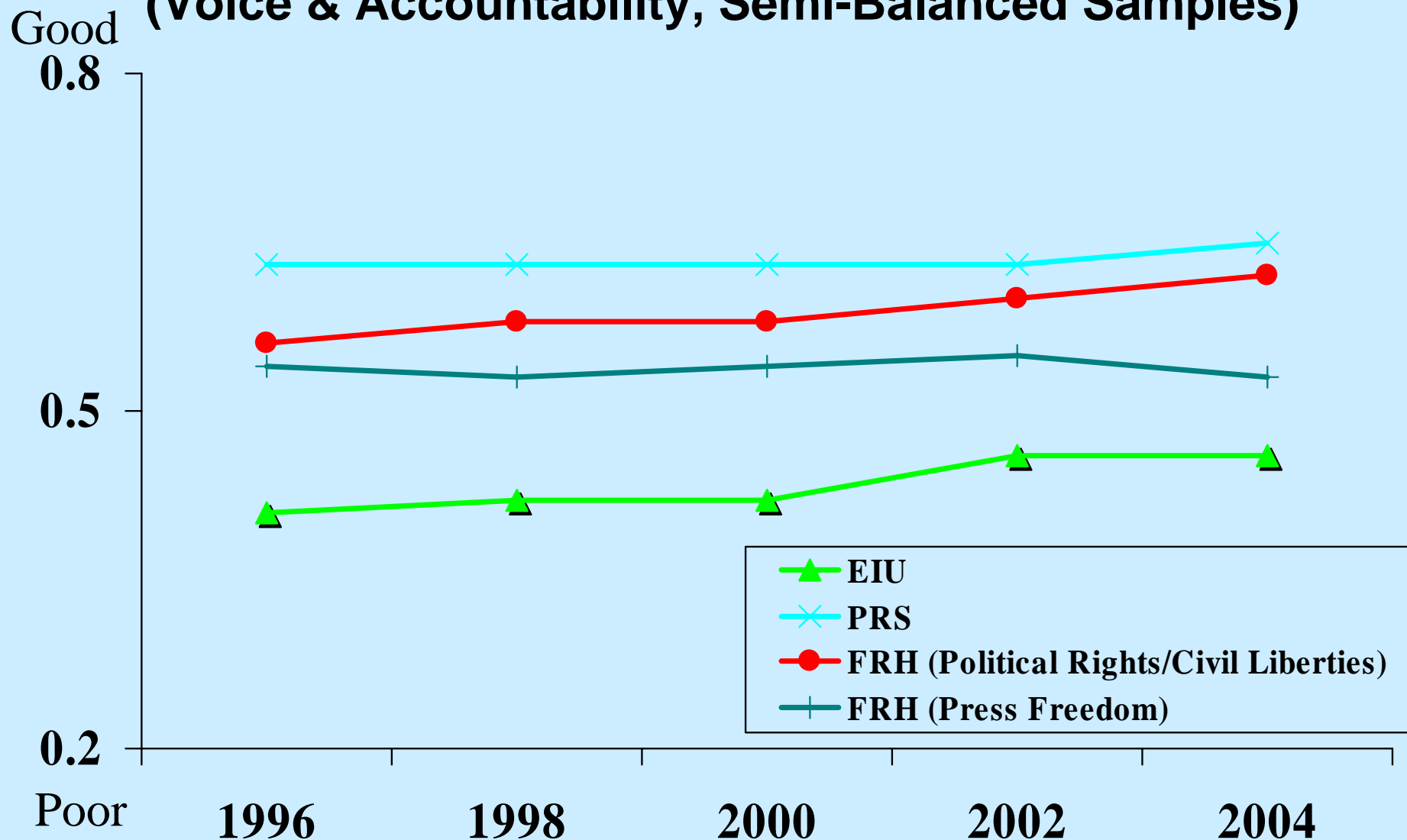
No Significant Trend in Governance Worldwide (Rule of Law, Semi-Balanced Samples)



PRS country coverage in 1996: 129, all other periods 140; GCS country coverage in 1996: 58, 1998: 59, 2000: 75, 2002 & 2004: 82; Heritage country coverage in 1996: 137; all other periods 155. QLM & EIU country coverage: 115 for all periods.

No Significant Trend in Governance Worldwide

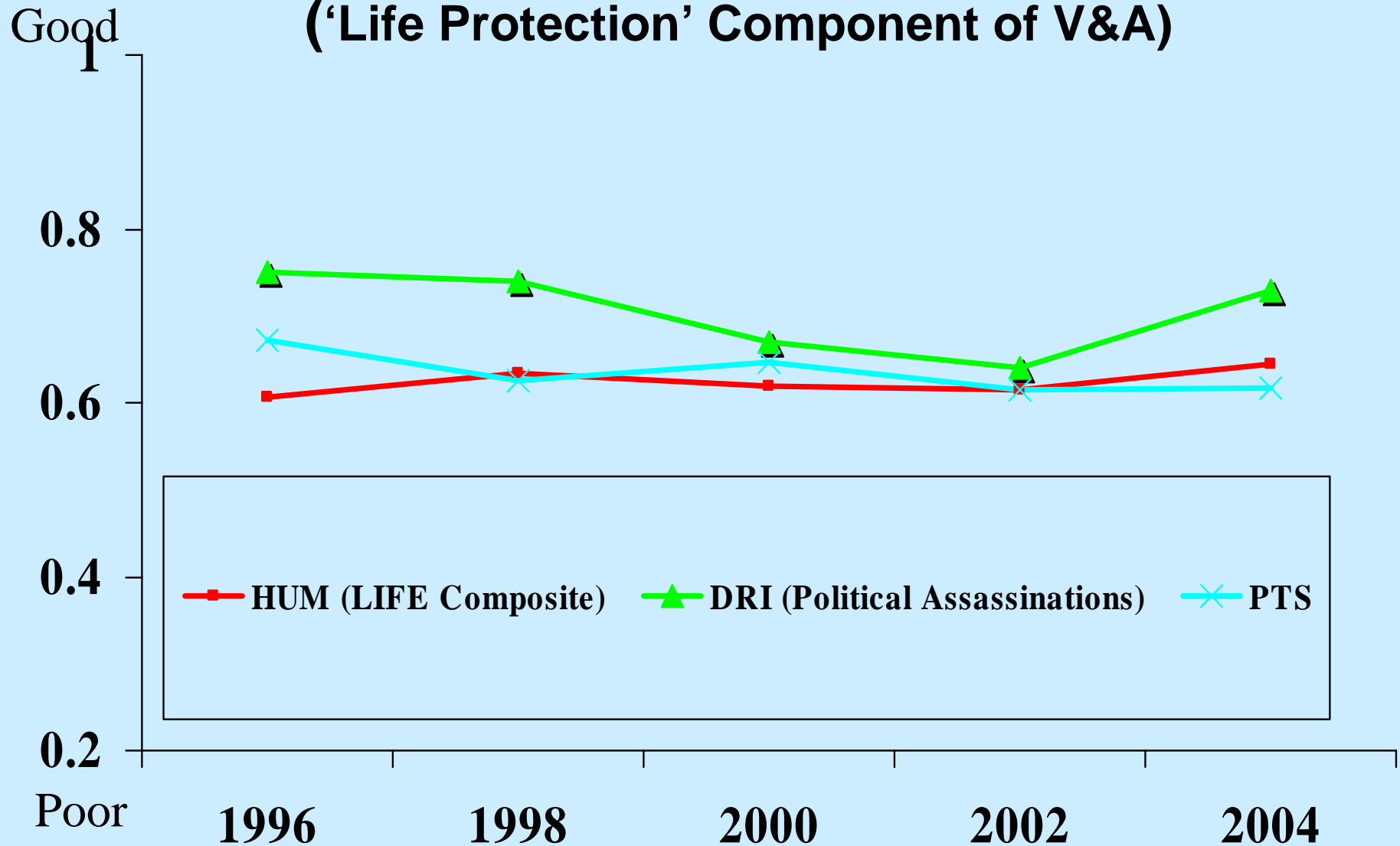
(Voice & Accountability, Semi-Balanced Samples)



PRS country coverage in 1996: 129, all other periods 140 and includes military in politics and democratic accountability; FRH country coverage: 190 for all periods; EIU country coverage: 115 for all periods and includes orderly transfers of power for all years, and freedom of association, human rights, and accountability of public officials for 1996, 2002 and 2004.

Human Rights Over Time Worldwide...

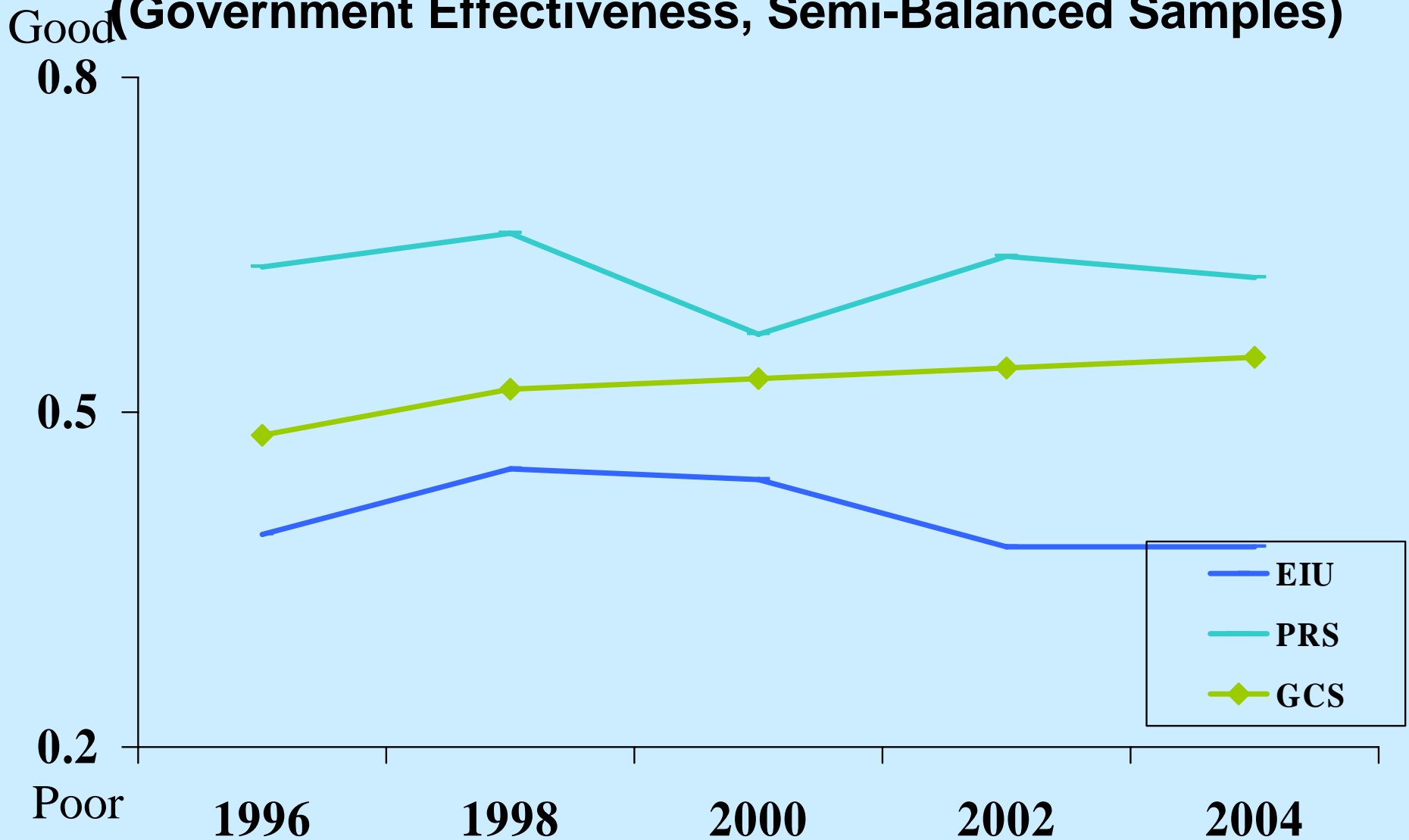
('Life Protection' Component of V&A)



HUM country coverage: 159 in all periods; DRI country coverage: 106-118. PTS country coverage: 170-177. Life composite is an average across following variables: Imprisonments, Killings, Tortures, and Disappearances.

No Significant Trend in Governance Worldwide

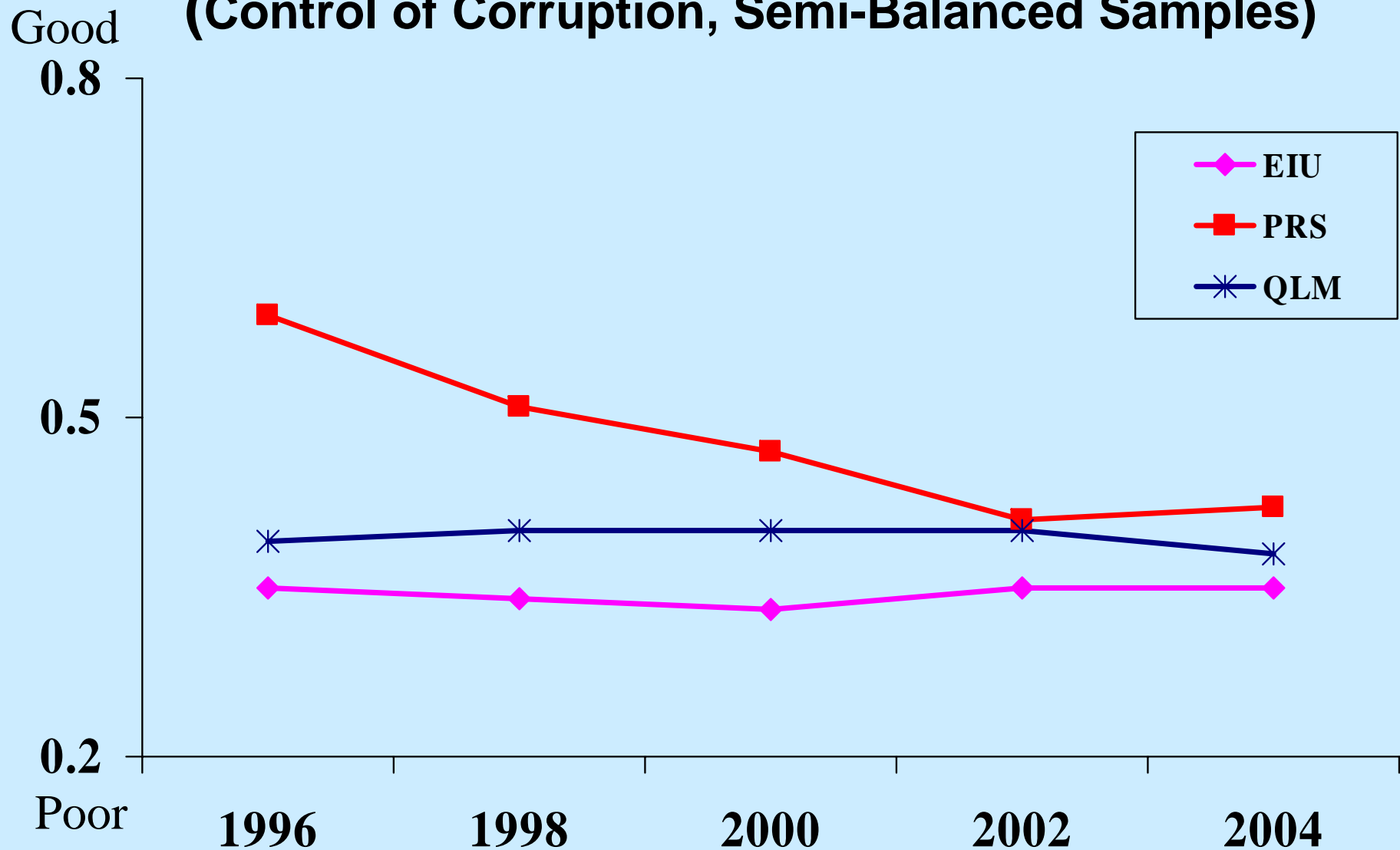
(Government Effectiveness, Semi-Balanced Samples)



PRS country coverage in 1996: 129, all other periods 140; GCS country coverage in 1996: 58, 1998: 59, 2000: 75, 2002 & 2004: 82; EIU country coverage: 115 for all periods.

No Significant Trend in Governance Worldwide

(Control of Corruption, Semi-Balanced Samples)



PRS country coverage in 1996: 129, all other periods 140; QLM and EIU country coverage: 115 for all periods. 36

Perceptions Matter

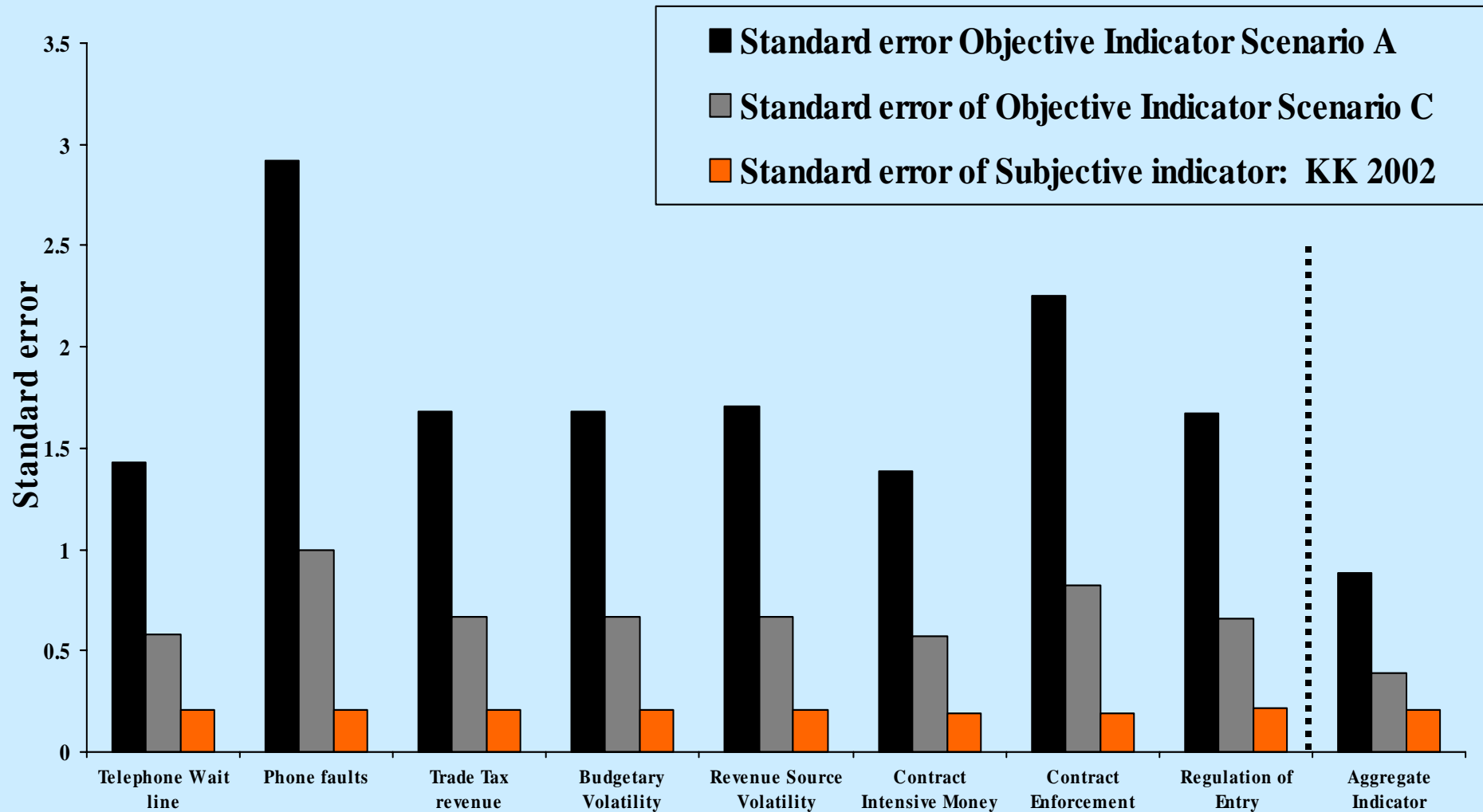
Perceptions-based data on governance are useful:

- Often only alternative (e.g. corruption)
- Captures more closely the concept being measured
- De facto measures are closer to ‘on the ground’ phenomena than objective ‘de jure’ information
- Perceptions do matter
- ‘Perception’ questions have become more rigorous, experiential and quantitative
- Concerns about ideological biases, as well as “halo effects”, are exaggerated
- Their margins of error are not unique
- Adds insights that ‘objective’ data does not

1. Margins of Error Are Not Unique to Aggregate or to Subjective Governance Measures

- Governance is difficult to observe directly, so available measures are proxies, e.g. for Government Effectiveness:
 - Perceptions measures:
 - “bureaucracy hinders business” (WCY)
 - “public debt management” (CPIA)
 - “quality of public schools” (GCS)
 - Objective measures
 - Trade taxes as share of total tax revenue
 - Number of telephone faults
- Aggregate governance indicators have explicit margins of error, which are lower than for individual indicators
- Margins of error are implicit in ‘objective’ and in individual subjective indicators—*but they are large too*

Large Margins of Error for Objective Governance Indicators Too

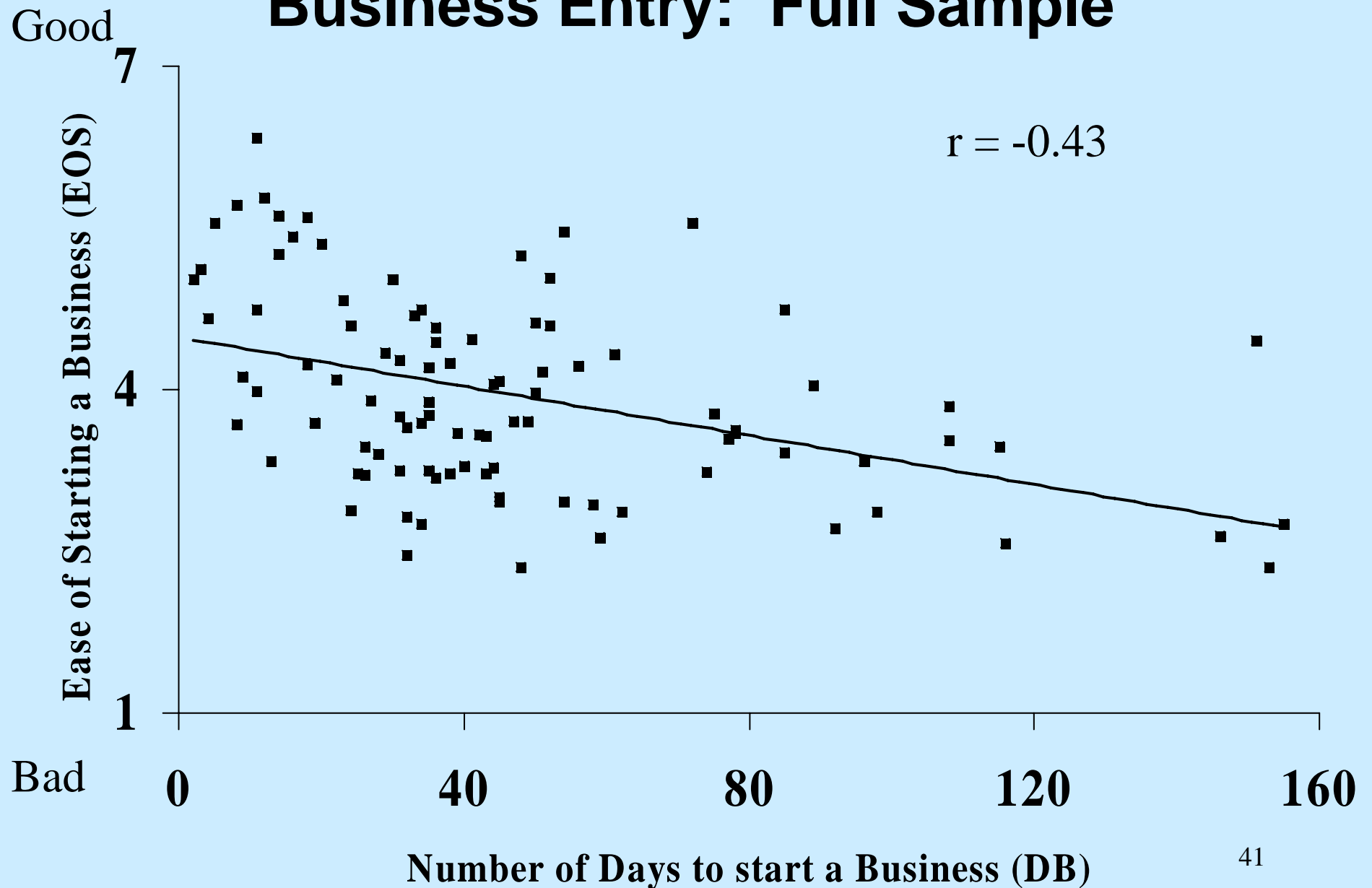


Option A: estimate of standard deviation of measurement error in subjective indicator is correct. Option C: standard deviation of measurement error in subjective indicator is twice as large as that in the objective indicator. The standard error of subjective indicator refers to the Governance component closely related to the associated objective indicator

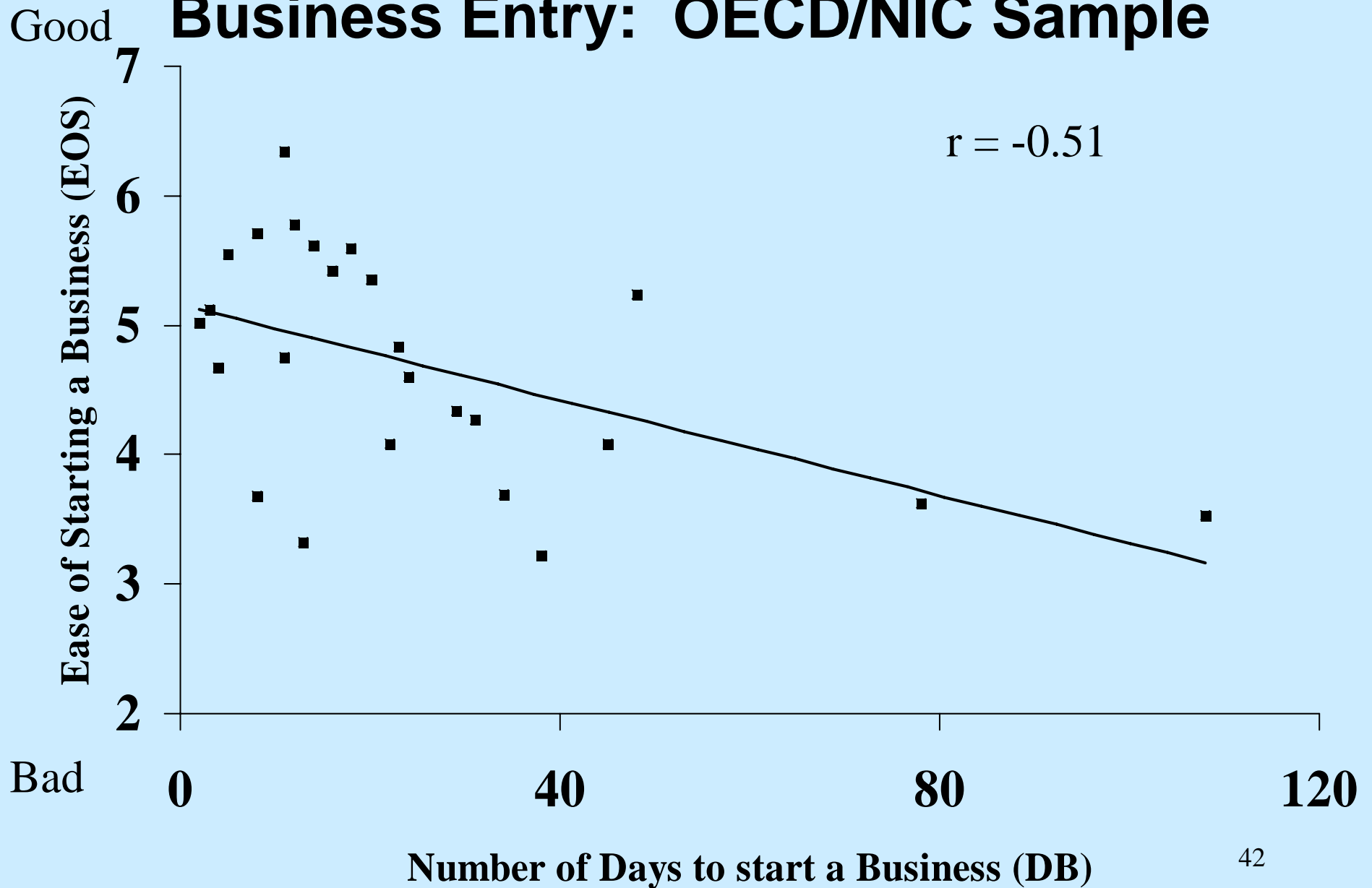
2. Subjective Indicators Add Valuable Information

- Compare very specific subjective and objective measures of the investment climate
 - Business Entry
 - GCS Survey: *“Ease to start a business?”* (1-7)
 - ‘Doing Business’ Objective Data: *No. days to start a business if statutory procedures are followed*
 - Tax Burden
 - GCS Survey: *“How heavy is tax burden?”* (1-7)
 - PWC: Data on statutory tax rates
- What accounts for difference between two measures?
 - Corruption explains more of variation in subjective measures of investment climate than do objective measures of regulations
 - Results remains intact after controlling for potential perception bias (kvetch, etc) -- *and in other scenarios*

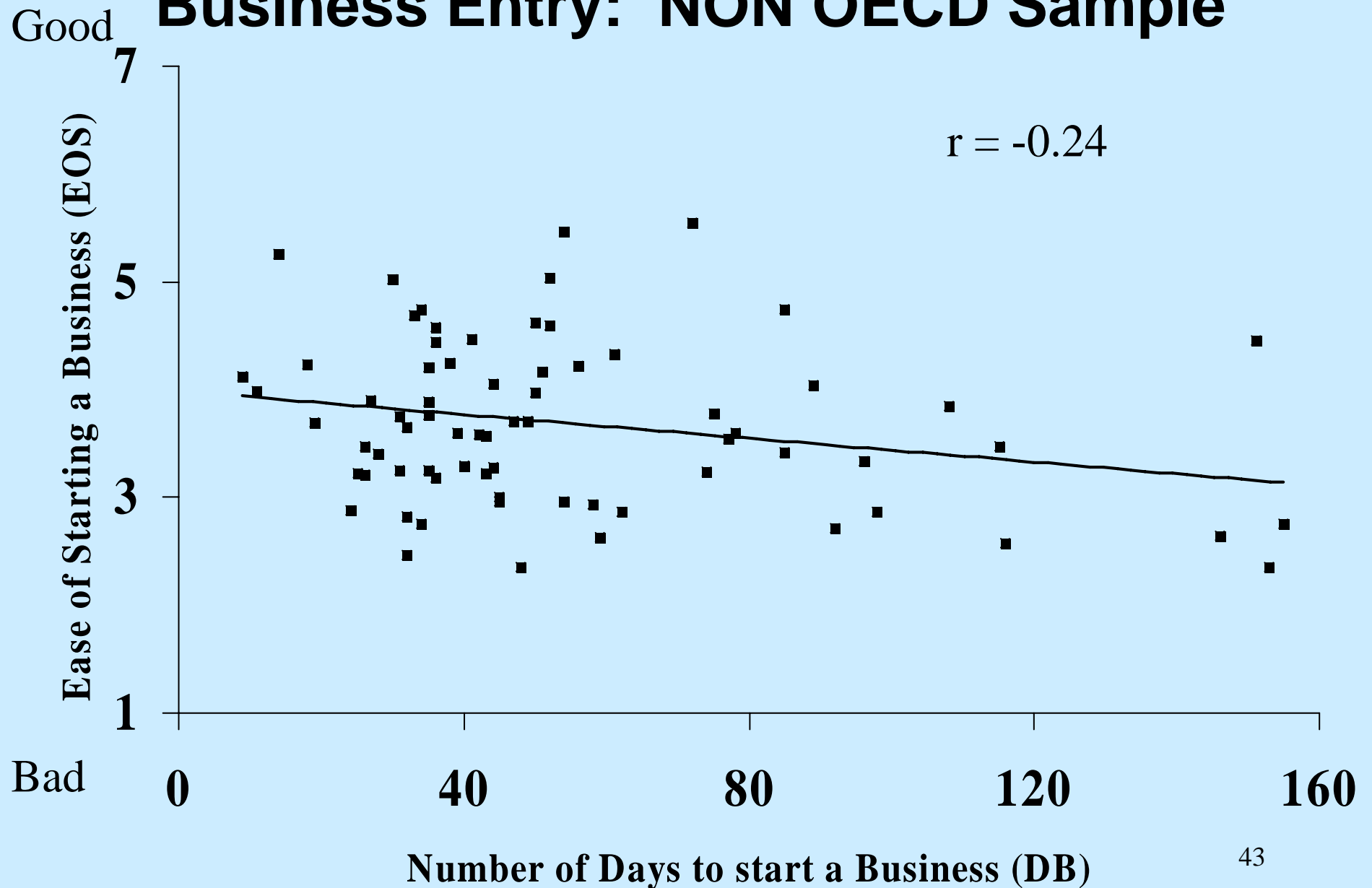
Subjective and Objective Measures of Ease of Business Entry: Full Sample



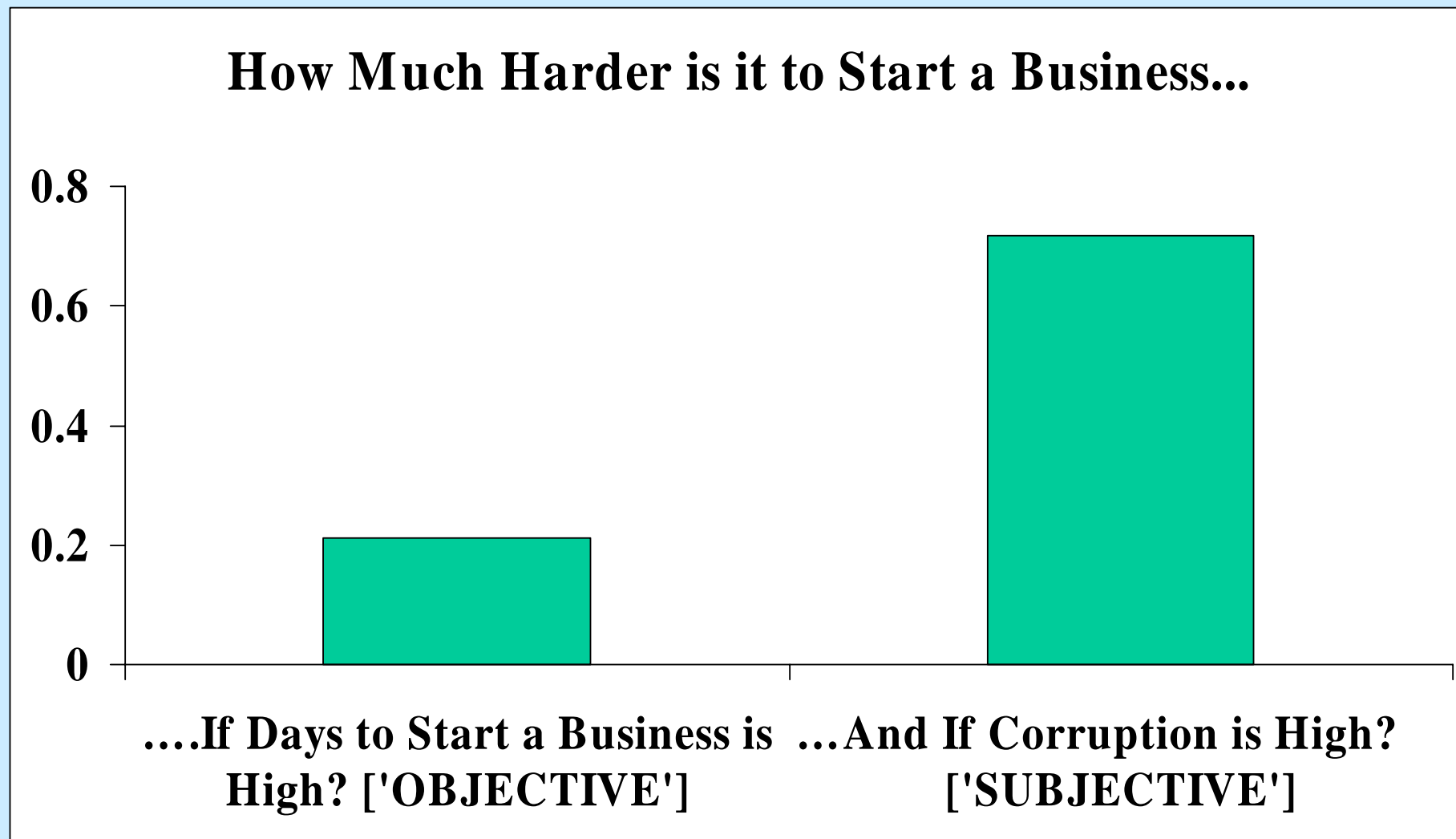
Subjective and Objective Measures of Ease of Business Entry: OECD/NIC Sample



Subjective and Objective Measures of Ease of Business Entry: NON OECD Sample



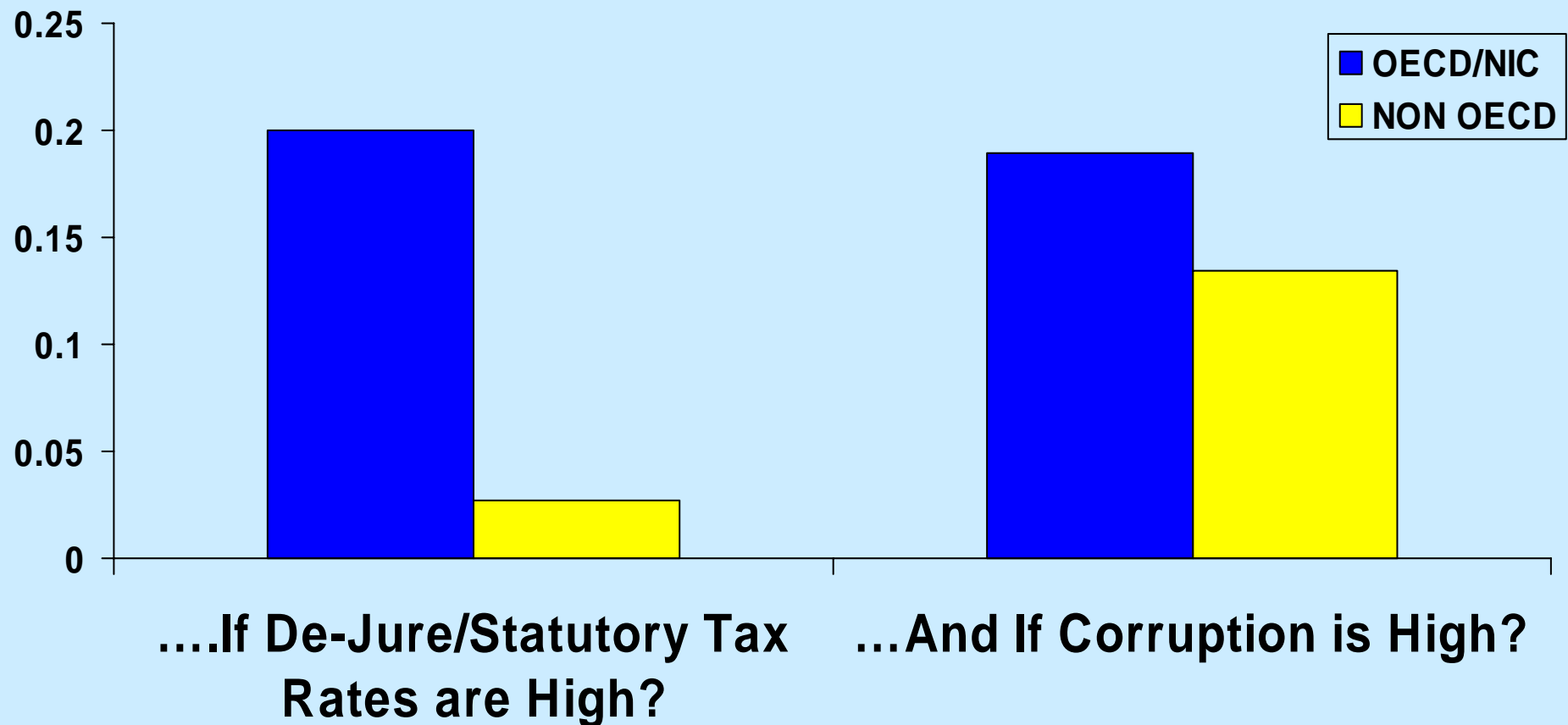
Explanatory Power of Subjective Measures (of Informality): The Pervasive Effects of Corruption On Investment Climate



Source: Kaufmann, Kraay and Mastruzzi (2005). The vertical axis measures the estimated impact on firms' responses to a survey question regarding the difficulty of starting a business (the 2004 Global Competitiveness Survey) corresponding to a de jure measure (capturing the number of days required to start a business) moving from the 50th percentile to the 75th percentile (first bar) and from also having overall corruption levels move from the 50th to the 75th percentile (second bar).

Explanatory Power of Subjective Measures of Corruption: *The case of Tax Burden*

How Much Higher is Perception of Tax Burden...

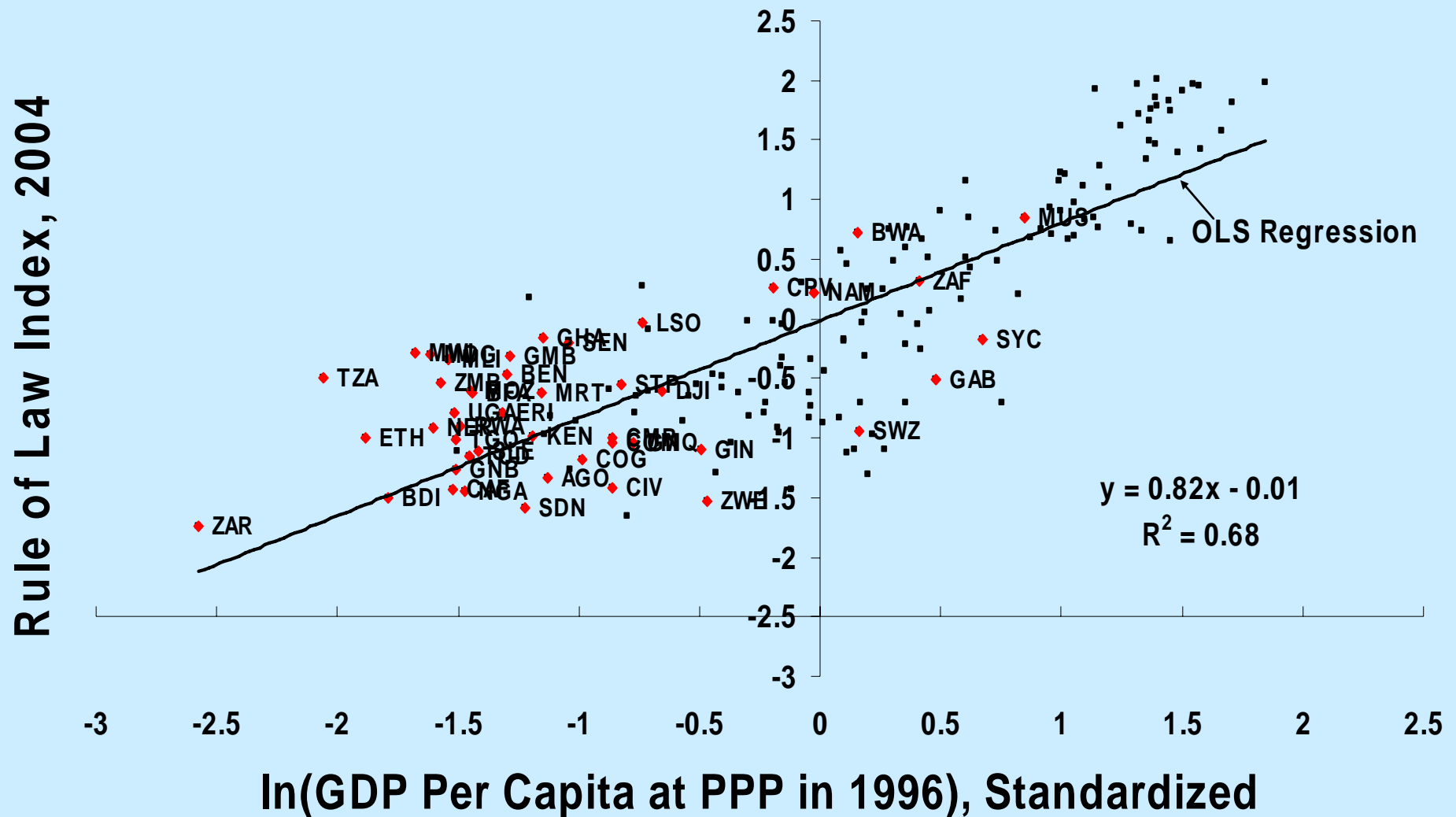


Source: Kaufmann, Kraay and Mastruzzi (2005). The vertical axis measures the estimated impact on firms' responses to a survey question regarding the burden of tax rates (the 2004 Global Competitiveness Survey) corresponding to a de jure measure (capturing the level of corporate tax levels in 88 countries) moving from the 50th percentile to the 75th percentile (first bar) and from also having overall corruption levels move from the 50th to the 75th percentile (second bar).

Governance Matters

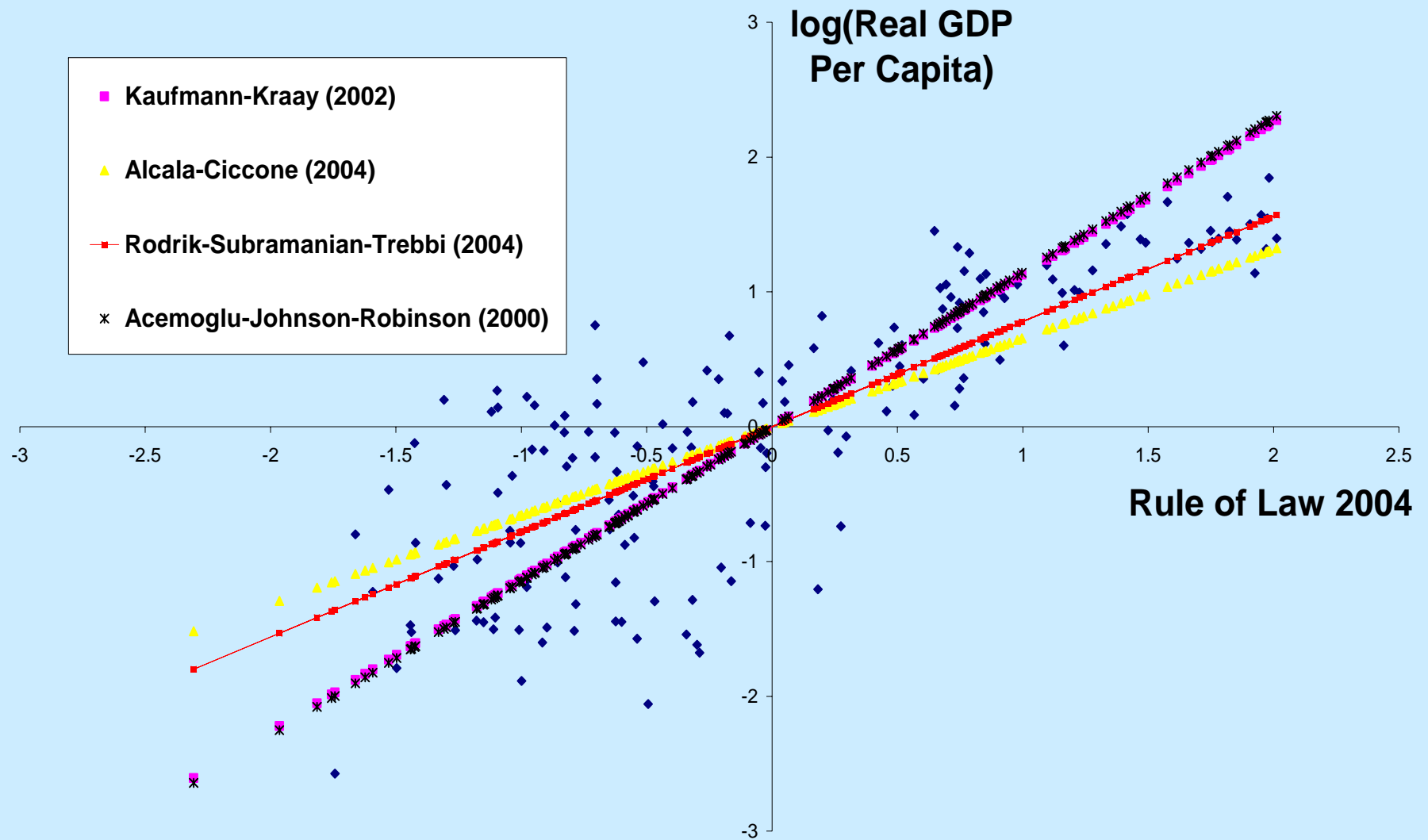
- **Development dividend of good governance is large: one-standard-deviation improvement in governance (e.g. in Rule of Law, from Somalia → Laos → Lebanon → Italy → Canada) raise incomes by two- to three-fold each**
- **Important implication: most of the strong correlation between governance and incomes reflects this causation, from governance to incomes**
 - **very little evidence of reverse causation, with incomes raising governance**
 - **“discounting” weak governance performance due to low income (e.g. in Africa) is inappropriate**
 - **underscores urgency of interventions to improve governance, *rising incomes alone won't do***

Simple correlation suggests 'reasonable' governance in Africa for its income levels

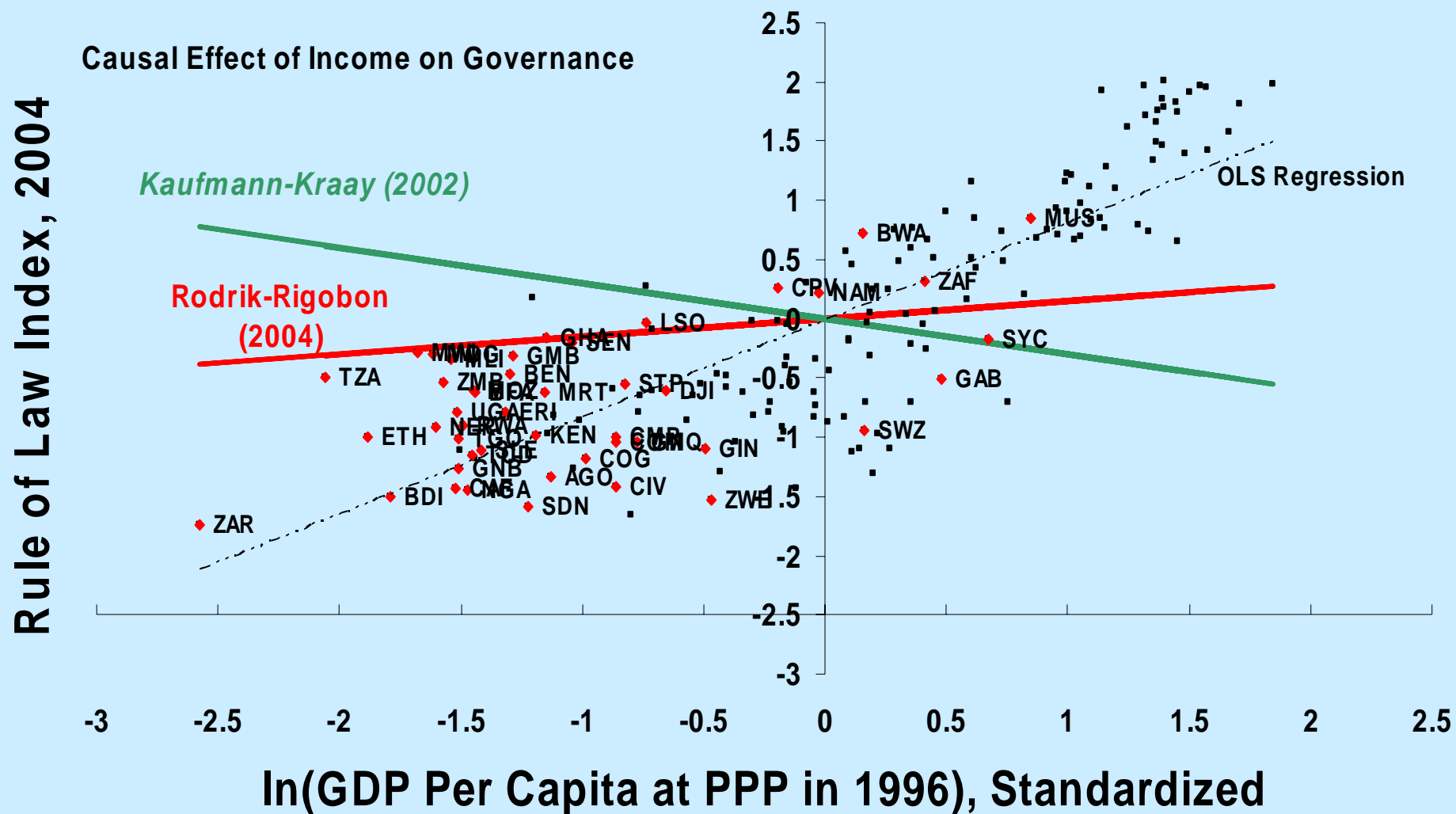


Governance Matters -- The 'Development Dividend'

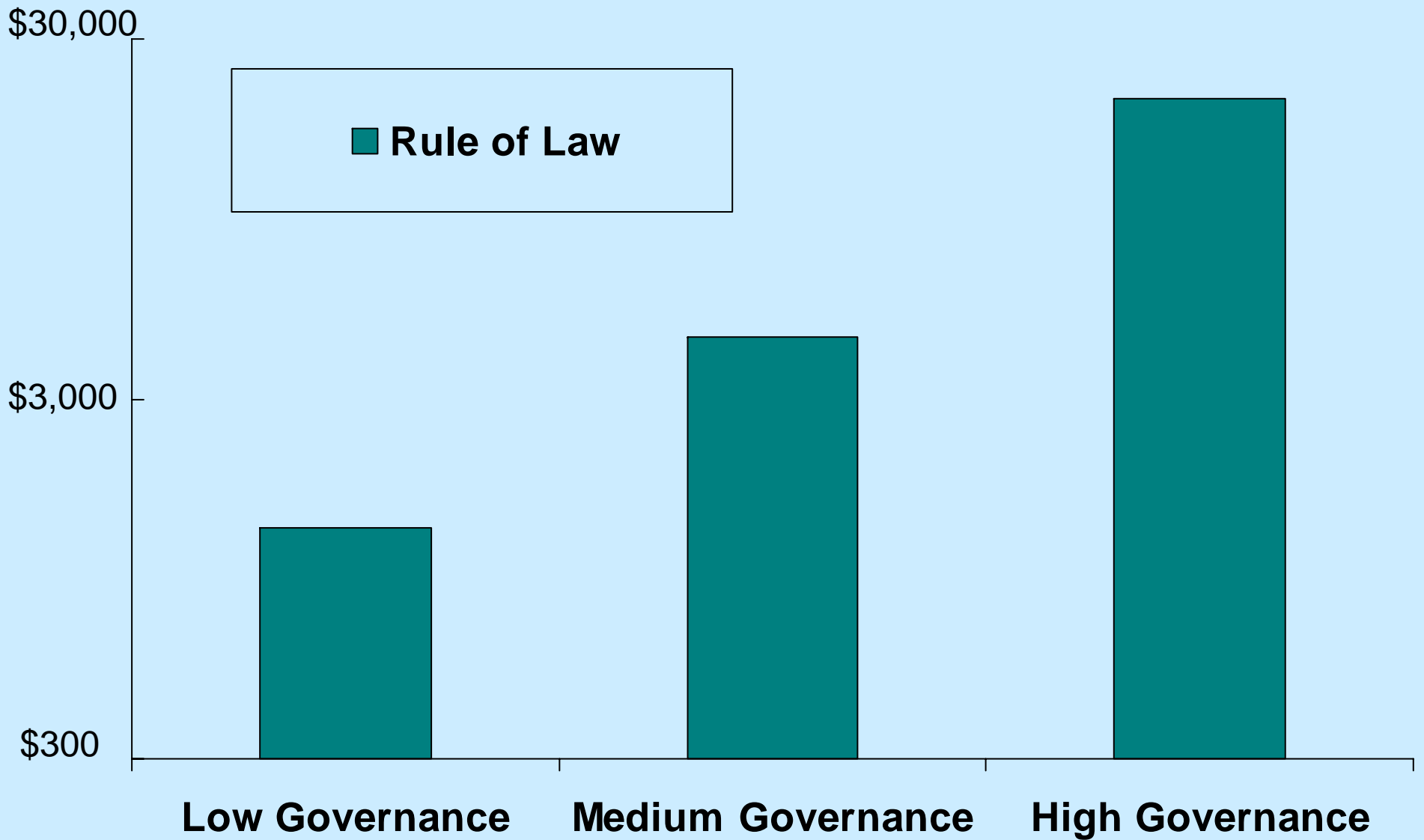
Isolating Causality: From governance to income)



Isolating Reverse Causality: From Income to Governance? Africa's Governance Worse Than Expected



Development Dividend From Good Governance



Data Source for calculations: KK 2004. Y-axis measures predicted GDP per capita on the basis of Instrumental Variable (IV) results for each of the 3 categories. Estimations based on various authors' studies, including Kaufmann and Kraay.

Conclusions and Policy Implications

1. Measuring governance is important

- Policymakers, citizens, enterprises and investors know that good governance is key for poverty alleviation and improved investment climate
- Demand data and analysis to monitor governance over time, to diagnose problems, and set priorities
- Empowers civil society and reformers for change
- Helps donors assess aid effectiveness
- Enables policy-relevant research on causes and consequences of good (and bad) governance

Conclusions and Policy Implications, Cont'd

2. Measuring governance is feasible

- Expanded & updated indicators covering all countries
- Margins of error in any governance & investment climate data need to be taken seriously
- Subjective/perceptions data lend important insights
- Advantage of these aggregate indicators: they *quantify & use* margins of error in assessing governance levels & changes
- It is now possible to determine whether differences across countries, or across time, are significant or not

Policy Implications, Cont'd

3a. Governance matters: large “development dividend”

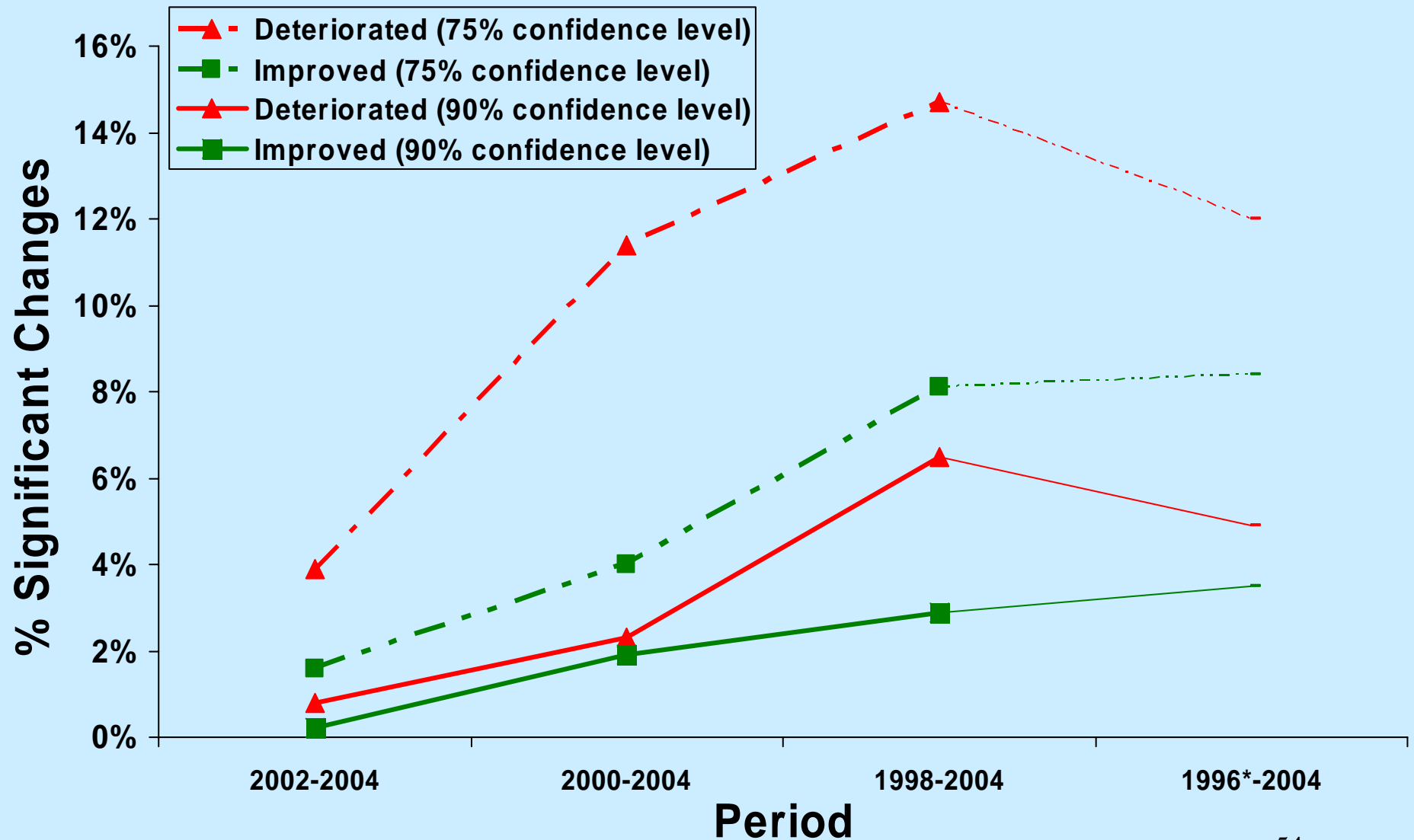
- strong causal impact of governance on incomes, but little evidence that higher incomes raise governance
- no basis for discounting poor governance when low income -- but aid can be effective

3b. But the world on average is ‘stagnant’ – *w/ variance*

4. Thus, need to refocus efforts to improve governance

- frank questioning of what doesn't work (anti-corruption commissions?; legal fiat?, etc.)
- move towards what may work (even if difficult): ‘voice’, devolution and transparency reforms, as well as private sector involvement, governance-in-sectors
- Towards an ‘Era of Impatience’?: *Countres can change*
- Collective Responsibility: rich & emerging economies

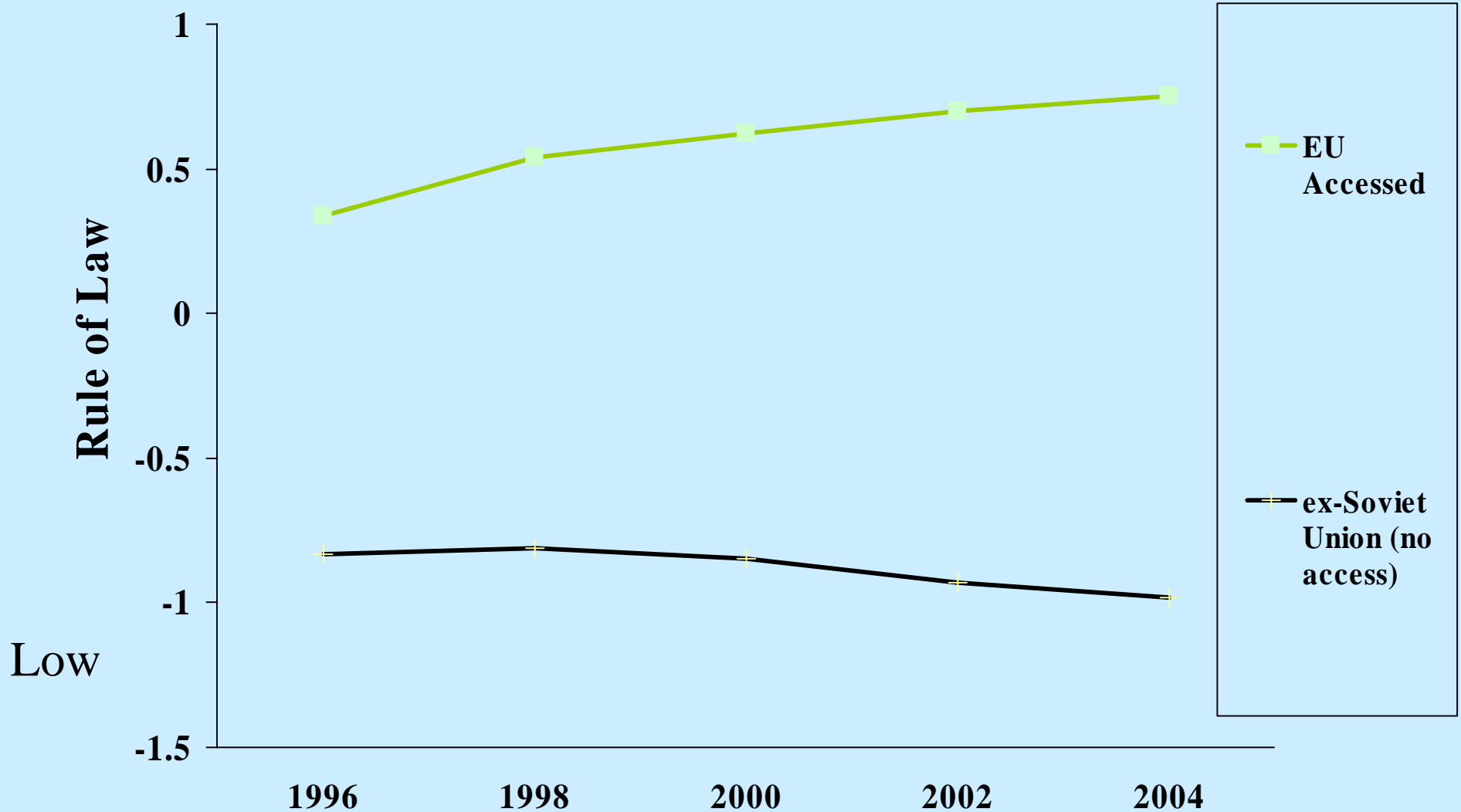
% Significant Changes Over Time Average Across All 6 Governance Indicators



* In 1996, there were fewer sources available, and thus the margins of error of the aggregate indicators were larger than in subsequent periods. ⁵⁴ Source for data: <http://www.worldbank.org/wbi/governance/govdata/>. Y-axis measures percentage of countries that experienced significant changes in each period sample.

Governance Has Improved in Some Groups: e.g. “Pull Effect” of EU Accession

High



Low

Source for data: <http://www.worldbank.org/wbi/governance/govdata/>. EU EE Accessed Countries: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

Data for Analysis and Informing Policy Advice, Not for Precise Rankings

Any data on Governance, Institutions, and Investment Climate is subject to a margin of error. It is not intended for precise country rankings, but to highlight relative strengths and weaknesses and draw analytical and policy lessons. The data presented here and in the Report do not necessarily reflect official views on rankings by the World Bank or its Board of Directors. Errors are responsibility of the authors.

Further materials & access to interactive data:

General: www.worldbank.org/wbi/governance

Data: www.worldbank.org/wbi/governance/govdata/

Report: www.worldbank.org/wbi/governance/pubs/govmatters4.html