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MEASURING CAPACITY AND WILLINGNESS FOR POVERTY REDUCTION IN FRAGILE STATES

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This Working Paper is part of a series prepared by the Poverty Reduction in Difficult Environments (PRDE) team in the Department for International Development's Policy Division. It is neither a statement of government policy nor a consultation document on what should become UK policy. Rather it is a working paper to encourage discussion within and outside DFID on the topic of difficult environments. As such, it solely represents the views of those involved in its drafting. Please send all feedback to Ms. Magüi Moreno-Torres at M-Moreno-Torres@dfid.gov.uk.

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Abbreviations

CIM	Contract Intensive Money
CPIA	Country Policy and Institutional Assessments
DAC	Development Assistance Committee of the OECD
DFID	UK Department for International Development
FAO	Food and Agriculture Organisation
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IRIS	Illinois Research Information Service
HDI	Human Development Index
MCA	Millennium Challenge Account
MDGs	Millennium Development Goals
PRSP	Poverty Reduction Strategy Paper
UNDP	United Nations Development Programme
UNHDI	United Nations Human Development Index
WBI	World Bank Indicators
WHO	World Health Organisation

Summary

- This paper examines a set of possible proxy measures for weak or fragile states, here referred to as 'difficult environments'. Difficult environments are defined as those areas where the state is unable or unwilling to harness domestic and international resources effectively for poverty reduction.

- Based on our definition of difficult environments and on a set of methodological criteria, the paper suggests the best parsimonious proxy measures to quantify capacity and willingness. We do not claim to develop complex measures similar to the governance measures and more comprehensive capacity measures currently being developed by numerous governmental organizations, NGOs and Universities.

- Capacity to engage in partnerships for poverty reduction is best measured, for our purposes by simply constructed indicators consisting of objective variables that have been previously assessed in academic literature to be proxy factors or causal factors for one or several of the basic aspects of state capacity. The paper finds that indicators combining Immunisation rates, and Female/ Male Life Expectancy, Public Health Spending as a percentage of Tax per GDP, and the % of Female Government Ministers are good proxies for willingness to reduce poverty because of reasonable availability of the indicators, the differentiation they afford between countries and the sensitivity of the factor to policy changes.

- The measurement approach presented here is intended as a tool to inform decision-making on responses to difficult environments for better poverty reduction outcomes. Such measures are not intended to form a list of difficult environments. Other diagnostic tools will be just as important, particularly context-specific political analysis.

I. Introduction: What are we trying to measure?

1. *What are difficult environments and why are they important to poverty reduction and the achievement of MDGs?* Difficult environments, also referred to as fragile states, are generally the countries with the lowest levels of life expectancy, literacy and access to basic services, and with the highest levels of infant and maternal mortality, crime and corruption. Since many of the world's poorest and most vulnerable people live in these states, they are of vital importance in reducing poverty[1]. The problem of difficult environments, although understood here to be centred on state effectiveness, is not only due to the weakness of aid recipient states, but also to the policies and actions of donors, and global factors such as trade and economic shocks. Indeed, one of the main challenges to measuring fragile states is to come up with indicators that, to some degree, reflect its relational aspects.

> ***Working Definition of Difficult Environments[2]***
>
> *Those areas where the state is unable or unwilling to harness domestic and international resources for poverty reduction*.

2. *We aim to measure capacity and political willingness to use resources for poverty reduction*. We are not assessing performance, conflict or developmental outcomes per se, but to what extent a country has the capacity and its political leaders the willingness to improve the well being of the population. Given the wide range of policy concerns, diverse state experience, and multiple definitions that are currently in use for fragile states, the purpose of this paper is to set out an approach to measuring state fragility that has a high degree of analytical utility for the challenges of development and poverty reduction. The key issue is measuring those aspects of state capacity and government policy that are vital for basic development effectiveness.

3. *What this paper will do: use existing measures to come up with two indexes for capacity and willingness*. Capacity and willingness represent the lowest common denominator for a minimally effective state on many dimensions (security, law enforcement, economic policy, service delivery). Both capacity and will are required for development effectiveness. Areas where the state lacks the jurisdiction, authority, or capacity to exercise effective control and implement programmes are clearly areas where a poverty reduction partnership is difficult for donors and other actors. Similarly a government that is not committed to sound regulatory policies and programmes aimed at poverty reduction may lack the political will to use resources effectively for development. Yet when the notions of capacity and willingness are used as criteria for programming, their

[1] For a more detailed discussion of the importance of fragile states for the achievement of the MDGs, please see: Branchflower (2004).
[2] See Moreno Torres, M and M. Anderson (2004).

features become much less clear. This paper aims to provide indicators for each concept for a quantitative approximation to state effectiveness, to be corrected and defined by contextual analysis.

4. *The primary objective is coming up with two indexes that can contribute to better DFID responses, both in our analysis and in our programmes*. Regular monitoring of country situations should enable context-specific responses and a better sense of trends. The measures proposed here will provide information, but will not determine – on their own – the list of countries considered difficult environments. Due to comparability problems between data for different countries, these measures should not be taken as an index of state weakness.

II. The measurement challenge

5. *Measuring both state capacity and willingness is a difficult task and ultimately a question of political judgement* on a case-by-case basis given there are no internationally agreed criteria by which to measure state performance that are applied consistently. The basic problems of subjectivity and political partiality, or judging them by our standards, will not disappear and we need to be careful to take this into account. In other words, how much can countries diverge from a median measure before they are considered difficult environments? Should we have a cut-off point or should we work with a continuum where the threshold for capacity and willingness moves depending on a variety of additional factors?

6. *The problem of causality*: many academics and policy-makers agree that higher levels of income are preferred to lower levels of income. A better educated population is better for long-term development. But do these two factors have a causal relation? Does a better educated population lead to higher levels of income or do high income levels cause more education? Understanding the causal relationships between social, political, economic and security realms is a challenge and measures of symptoms are not measures of causes.

7. *State capacity versus country capacity*. Our approach underscores the importance of state capacity: the role of institutions, in particular governance institutions (understood as basic functions), that secure property from private and public predation, and form the basis for development. Underlying any discussion of long-term good performers must be a discussion of the governance structure of society. We are therefore attempting to measure state capacity but recognize the importance of country capacity, which includes non-state institutions such as civil society and the market.

8. *Willingness as a normative dimension to state effectiveness.* Whereas state capacity is a politically neutral concept that describes the effectiveness of public institutions (debates around the scope of a state can, however, be ideological), the notion of willingness carries a normative weight in that it assesses the quality of *policies* to reduce poverty.

9. *The challenge of good data*: Good data, especially for developing countries, does not exist for many indicators of a country's 'goodness.' For example, nearly one-third of the countries that are eligible for the MCA do not have data for each of the 16 indicators. Additionally, there are several methodological difficulties when using governance data. Many indicators are highly collinear; certain criteria may appear in more than one indicator; governance data tend to measure performance without assessing institutional arrangements or processes; and assigning a relative measurement weight to willingness and capacity can be difficult: should it be country specific or standard for all?

10. *In terms of a process for coming up with indicators of capacity and willingness*, this exercise started by building on the conceptual framework derived from the definition in Text Box 1 (and Working Paper 1), setting a universe of countries, and choosing proxies for the two key variables. First, the challenge of conceptual clarity. This measuring exercise assesses essential functions that affect a state's capacity to mobilise and use resources for poverty reduction. If these essential features are missing or are met to a limited extent, then the capacity of the state to engage with others to reduce poverty will be seriously affected. They include the foundations of state authority, the allocation of power, the economic competence and the capacity for implementation. When assessing the willingness of a state to engage in partnerships for poverty reduction, we are specifically looking at two closely related notions: commitment and responsiveness[3].

11. *Setting the universe of countries*: we are assessing all countries that are eligible for borrowing from the World Bank as of July 2004. This includes 146 countries that borrow from the International Bank for Reconstruction and Development as well as those that borrow from the IBRD's concessional arm, the International Development Association (see Annex 2 for a complete list).

12. *Choosing proxies*. There were several questions to address, including to what extent we should look for outcome versus process proxies and absolute levels versus rate of change. Also, how to deal with data gaps? A detailed explanation on how we went about aggregating proxies and the challenge of normalisation features in Annex 2. Proxies were not weighted, but each of the variables were standardised if they were not already continuous between 0 and 1. The general criteria for selecting proxies include:

    a) We use proxies based on their simplicity, data availability, and the extent to which the measurements are good proxies (in that they represent what we're trying to measure, based on tested hypotheses in the literature).

[3] See Moreno Torres, M. and M. Anderson (2004) for a more detailed discussion of these.

b) In order to alleviate the problems discussed above, we measure the willingness and capacity of a country's poverty reduction on two indexes made up of several indicators. Our definition emphasizes the role of state capacity with a theoretical basis rather than just correlations. Thus, difficult environments have limited state capacity and poor governance institutions.

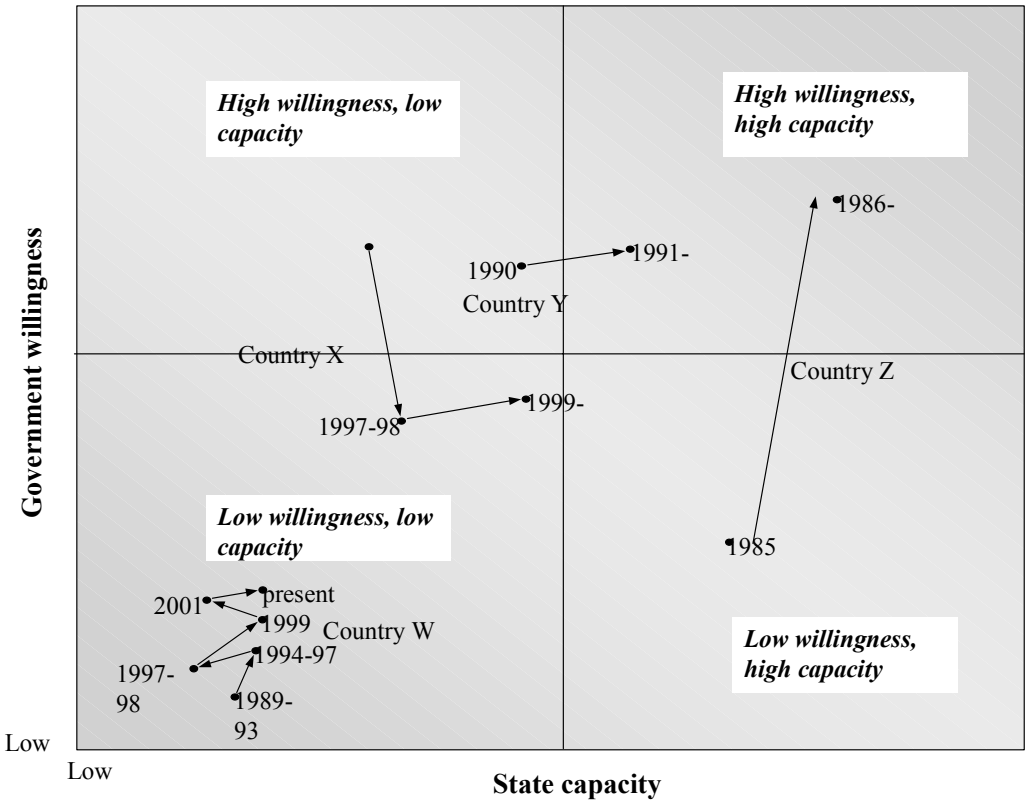
c) Getting the right mixture of the so-called "hard indicators", such as resources and outputs, with "soft indicators" on impacts and outcomes. The project is a nascent effort to find simple indicators that will show change over time (see figure 1). It does not attempt to replicate extensive, ongoing studies by governmental organizations, universities and NGO's concerning governance.

d) Operationally-relevant measures should also be institutionally specific so that reformers know which institutions to reform and how to do so. The idea of simple indicators stems from this aim to identify where change can best effect progress.

e) Minimising subjective and non-transparent evaluations. Using datasets that are publicly available, data that are the most reliable, and have the greatest coverage.

Figure 1 below provides a visual and dynamic representation of the definition.

Figure 1: State Capacity and Willingness



III. Proxy measures for capacity

13. *What are we trying to find proxies for?* When assessing the developmental capacity of the state, we are looking to the core features that most strongly influence the state's capacity to mobilise and use resources for poverty reduction. They include:

    - Control of territory
    - Ability to provide security
    - Administrative capacity to implement socio-technical programmes
    - Effective delimitations of political power
    - Capacity in basic macro-economic functions
    - Capacity to deliver basic services to citizens

14. *What measures could capture these?* One set of measures revolves around the financial resources available to the state (including its capacity to extract them) and a second one looks at the human and technical capability to use them. On the financial side, tax revenue as a percentage of GDP is an obvious choice, although this measure is not immune from willingness bias. On a more general financial and security level we try several indicators that include Real GDP per capita (purchasing power parity). Apart from the individual variable measurements, a few of the composite variables such as government effectiveness (GE) from the World Bank, and the Bertelmanns Management Index, and the Purdue Terror Scale were tested (although the last two were discarded). We opted to construct a simple replacement indicator composed of objective variables most notably because it is impossible to unpack an index with many components and identify which component can be affected by a policy change. The variables that were chosen and their rationale with the above objectives for measuring capacity are listed below[4].

    - *Tax as a percentage of GDP:* Originally, World Bank tax data were used, but its drawback is uneven coverage in terms of countries, so data from the IMF Article IV reports, which has better coverage, were also included.
    - *GE Government Effectiveness:* These data are one of the six dimensions of governance developed by the World Bank, each of them an aggregate of multiple weighted variables. Government effectiveness is comprised of elements meant to capture the quality of public service provision, an important component of good governance to most governmental organizations including the MCA.
    - *Real GDP per Capita:* This variable is widely available, is comparable between countries (purchasing power parity) and is a variable that the literature proves to be highly connected with security (Fearon and Laitin 2003).
    - *POLCON V.* POLCON is an objectively constructed indicator measuring institutional constraints on the government. Henisz (2004)

[4] For a more detailed discussion of data sources, please see Annex 1.

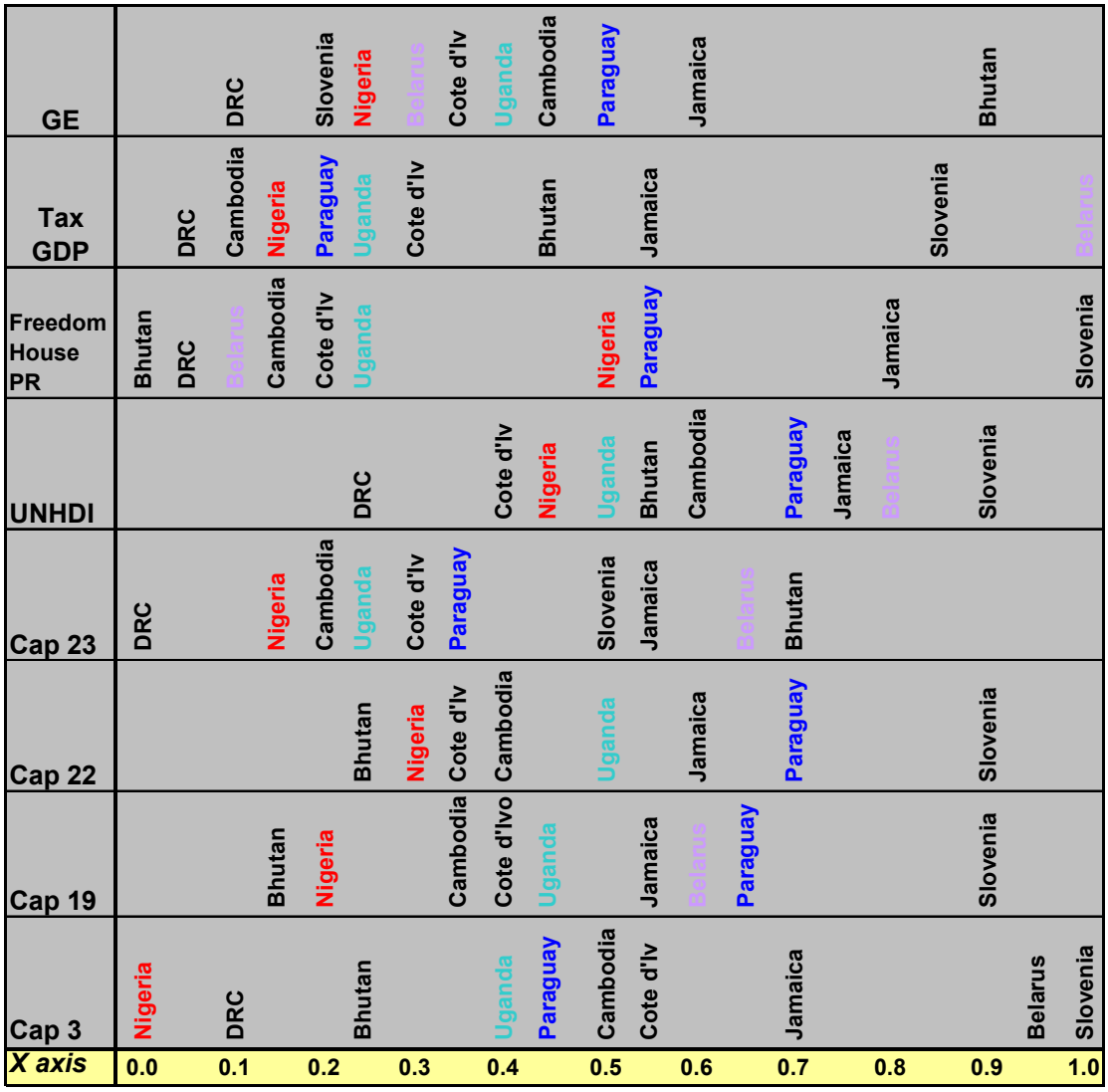
maintains that this indicator measures institutional robustness against shocks that destabilize reform processes (Collier 2002). Similar POLITY Database measures (notably Political Competitiona and Participation) were discarded as they are based on subjective assessments by experts.

- *FDI Stock per GDP:* Measures the impact of foreign versus local power – the degree of the country's autonomy. (De Soysa and Wagner 2003).
- *Fertility Rate:* Fertility Rate is a widely available variable. This variable is extensively studied in the growth literature and is a good proxy for the effectiveness of education and equality policies as well as a social capital indicator (Feng, Kugler and Zak 2000; Kremer and Chen 2002). Kremer maintains that temporarily increasing access to educational opportunities could permanently reduce inequality (2002). We inverse this indicator (1-x) so that the smaller number of births show greater development, better education, more social capital and/or better equality.
- *Phones and Mobiles per 1000 population:* This variable is available for 144 countries and though it is fairly correlated (.74) with GDP per capita, however it varies independently. Factor analysis showed this variable to not be unique from LN Real GDP per Capita. Though we do not use the literature for this, we reason that this variable is a good proxy for certain social and technical advancements.
- *% of Females in all government ministries (or in economic ministries or social ministry positions):* Literature shows that involvement of women in governing indicates lowering of corruption and decrease in violence (Caprioli, 2000, Knack and Azfar 2002). Furthermore, Grootaert and Van Bastelaer (2002) claim that 'women and their associations were found to be consistent diffusers of information and technology, and able to tap into and generate social capital'[5]. Aid and US state department literature show increasing importance of women's measures in assessing development and stability.
- *CIM (Contract Intensive Money):* A measure of the level of money supply that exists outside of traditional institutions such as banks. This has been used as a proxy for 'rule of law', but is perhaps a better indicator of institutional development (Clague, Keefer, Knack and Olson 1999).

15. *On the basis of what criteria should proxies for capacity be used?*
    - Objective indicators preferred
    - Sensitive to political change
    - Discriminating
    - Data available for many countries
    - Autonomous of particular political ideologies or institutional configurations

[5] Grootaert and Van Bastelaer (2002), 15.

Figure 2: Comparison of data on X Axis



16. *The figure above shows several countries plotted on the capacity axis.* After testing many possible measures (see Annex 1, 2 for a list of some of the variables tested), individually and grouped, we chose several combination indicators – since none of the individual variables differentiated the countries adequately (see Annex 3 for examples using Tax Revenue as % of GDP and RPC). These indicators are compared to some of the widely used and publicly available aggregate indicators such as Freedom House's Political Rights Index (which we reversed and standardized so that the higher number shows greater rights), the United Nation's Human Development Index (UNHDI) and the Government Effectiveness Index (both standardized between zero and one as compared to the other 146 countries under consideration). Our Capacity 14 measure correlated with UNHDI at 0.80 using only 4 objective measures, and our Capacity 12 index correlated at 0.79 with UNHDI and 0.60 with TPI's Corruption Perception Index. The following variables (only a few of the multiple indexes derived and tested) were combined using an

additive method. No weights were used for the aggregation.[6] Theoretically, the individual variables are considered (as previously mentioned), but not in the aggregate. Only countries where all of the variables were available were retained thus no weights for missing data, or uncertain data were derived.[7]

- *Capacity 3*: A simple combination of the natural log of the Real GDP per capita standardized between countries and the inverse of the fertility rate, also standardized.
- *Capacity 12*: (combination of 5 variables) LN Real GDP per Capita, POLCON V, Inverse of the Fertility Rate, FDI Stock/GDP, Phones Mobiles per 1000 population.
- *Capacity 14*: (Combination of 4 variables) LN Real GDP per Capita, Inverse of the Fertility Rate, FDI Stock/GDP, Phones Mobiles per 1000 Population.
- *Capacity 19*: (combination of 4 variables) LN Real GDP per Capita, POLCON V, Inverse of the Fertility Rate, FDI Stock/GDP.
- *Capacity 22*: (combination of 5 variables) LN Real GDP per Capita, POLCON V, Inverse of the Fertility Rate, FDI Stock/GDP, CIM.
- *Capacity 23*: (combination of 2 variables) Tax per GDP, Governance Effectiveness.

17. *Additional measures considered*. These were also tested as proxies for capacity but were discarded for a variety of reasons.

- *Infant and child mortality*. According to the Political Instability Task Force, infant mortality (children under 1) is a better predictor of state weakness and failure than child mortality (children under 5)[8]. Both tend to be closely correlated to access to water, which in itself is a good indicator to distinguish the bottom two quintiles.
- *Improved access to water*. Has good data availability for 125 countries, better than for access to sanitation facilities.
- *Polity IV measure of stability*. Methodological problems in combining with other measures (distortion).
- *RPC (Relative Political Capacity):* Greater extractive capacity enables funnelling of resources to development if willingness is present. This

[6] The individual objective measures (as well as GE) were standardized among the available countries (out of the initial 146) for each variable, added then re-standardized in the aggregate. They were not weighted for the missing countries. No country was included if one of the chosen component variables was missing. If the indicators are found to be extremely useful over time, slightly more refined methods for weighting and aggregating should be derived.

[7] The individual variables ranged from 2000-2003. % Females in the divided sectors were available from UN Women in Statistics up to 1998. The standard indexes such as FH, we obtained the latest possible version, usually 2003.

[8] For a discussion, see Goldstone et al (2000).

did not provide the differentiation desired when combined with the willingness variable and at present has too few data points. This could be expanded considering it is a simple formula involving agriculture, exports, and manufacturing – currently fairly widely available data.

- *Internet Users per 1000 population:* This indicator is a good objective indicator of transparency – it is correlated at 0.74 to Transparency International's CPI. However, the coverage is not as great as the Phones and Mobile Phones per 1000.
- *OPEN:* Degree of trade openness also a good indicator of state capacity as discovered by the Political Instability Task Force.
- *FDI per Capita:* Originally hypothesized to be a good transparency/rule of law indicator. However, De Soysa (2003) suggests FDI stock per GDP as a better capacity measure covering strength of local autonomy to foreign and a measure for globalization.

IV. Proxy measure for willingness

18. *What are we trying to find proxies for?* Although the word 'willingness' seems to somehow imply that those in power have a straightforward choice or decision about implementing policy goals, there may be complex social and political factors at work. Good policies often make bad politics. Political will to reduce poverty at the apex of government may be frustrated by local officials who lack the will to implement policies that run counter to their personal interests. So too rulers who see the long-term value of pro-poor policy choices may be nevertheless be deterred by the short-term need to maintain political support among client groups. When assessing the willingness of a state to engage in partnerships for poverty reduction, we are specifically looking at two closely related notions. The first one is commitment: whether or not there is an explicit political statement that signifies an obligation or a promise to reduce poverty. The second one is inclusiveness: whether or not the political commitment to development and poverty reduction is in fact for all populations and social groups in a country. More specifically, we are trying to measure:

    - Explicit commitment to a poverty reduction goal
    - Credible strategy for poverty reduction
    - Strategy reflected in outputs and outcomes
    - Policies and programmes are inclusive of all groups
    - Partnership: open to the possibility of working with international actors (donors, NGOs, etc) to achieve poverty reduction goals

19. *What measures could capture these?* The perfect measure of willingness would be observed decisions by policymakers with regard to poverty reduction. But since we cannot observe this in any meaningful way that will enable large-scale, cross-country comparisons, we need proxies. To be suitable, these must be: a) largely the result of political decisions (not subject to exogenous influences), and b) occur in a reasonable short time frame from when the decision is made. Public spending patterns are ideal

for this, on both counts. Spending on health and education are obvious pro-poor spending choices, particularly on primary-level services since these are of most interest to the poor. If the measures are a share of GDP, this would capture not only the allocation within the resource constraint but would also pick up tax effort (or lack of). Ratios of education spending to GDP are themselves a composite of: a) the state's efforts to collect taxes, and b) the preferences in allocation across sectors. But we must also be realistic about the scope of political discretion in developing countries, since the first call on public finances is usually debt servicing. An ideal measure would be primary level sector expenditure (depending on availability of data) as a share of aggregate public expenditure net of debt servicing if this is available, or as a share of GDP.

20. *A measure that has increasing attention as an outcome indicator sensitive to policy change is Female/Male Life expectancy*. This ratio is unusual in that as countries prosper and improve in health care, men's mortality declines less in comparison to women's. In other words, as countries develop the gap between men and women increases. his variable is objective and widely available for all countries.

21. *The willingness measure indeed proved to be a much more difficult measure to capture conceptually and actually*. The individual variables for the composites are as follows:

- *Public Health Spending as ratio of the Tax/GDP ratio:* The reasoning behind this variable is that the state is willing to spend a greater amount of tax resources on health rather than redistribution of donor funds.
- *Rate of Immunisation:* This variable is extensively reported, has wide country coverage and is both sensitive to policy and variable over time.
- *Voice and Accountability:* A composite sub-indicator from the World Bank's aggregate governance indicators. These measures are aggregate measures that are not entirely objective.
- *Public education expenditure as a percentage of GDP*. The education expenditure is not as widely available as other measures, which is why fertility rate was instead used as a proxy for education.
- *Female/Male Life expectancy ratio*: As countries prosper, studies consistently show that male mortality declines less than female mortality.[9] Therefore, this ratio can be an interesting proxy for willingness, particularly for inclusiveness and commitment to development.
- *% Women in all Governmental Ministry Offices:* This paper introduces the notion that nation states with higher number of women in government ministry offices might be a higher indication of willingness for development, and Knack and Azfar (2002) claim that there is a lower likelihood of corruption among females.

[9] WHO press release 4 June, 2000

22. *On the basis of what criteria should proxies for willingness be used?*

- Objective indicators preferred
- Sensitive to political change
- Data available for many countries
- Free of explicit political bias

Figure 3: Comparison of data on Y axis

Yaxis	Will 6	Will 7	Will 10	Will 15	V & A	IMZ	FMLexp
1.0					Slovenia	Belarus	
	Belarus			Slovenia			
0.9						Slovenia	Belarus
0.8				Jamaica		Jamaica	
					Jamaica	Bhutan	
0.7	Slovenia	Slovenia	Slovenia			Paraguay	
		Jamaica	Jamaica	Belarus		Uganda	
0.6		Uganda	Belarus	Paraguay			
	Jamaica	Paraguay		Bhutan			
0.5	Paraguay	Belarus	Uganda	Uganda	Paraguay		Slovenia
	Bhutan	Bhutan	Bolivia		Cambodia		
0.4			Bhutan	Cambodia	Uganda		Paraguay
	Uganda					Cote d'Iv	Cambodia
0.3	Cambodia			Cote d'Iv	Cote d'Iv	Cambodia	Jamaica
	Cote d'Iv				Bhutan		Bhutan
0.2				Nigeria	Belarus	DRC	DRC
	DRC		Cote d'Ivoi				Nigeria
0.1		Cote d'Iv		DRC			Cote d'Iv
	Nigeria						Uganda
0.0		Nigeria	Nigeria			Nigeria	
					DRC		

23. *The figure above shows several countries plotted on the willingness axis.* The combination of the World Bank Indicator of Voice and Accountability (V & A) and the rate of immunisation seems to provide a good balance of objective-subjective measures. Immunisation has been shown to be slightly higher in autocratic regimes, whereas the 'voice and accountability' index is heavily tilted towards liberal democratic values[10]. Additionally, using the rate of immunisation as a proxy has several advantages[11]: a) it is highly time-sensitive (effects of immunisation policies can be appreciated in short term); b) it is politically un-contentious for any type of regime interested in the welfare of its people; c) there is reliable data for most

[10] Objective measures of accountability are an important component of the Stability Pact Anti-Corruption Initiative (SPAI). This initiative outlines an agenda for reforms in South Eastern Europe. See: http://www.stabilitypact.org/anticorruption/default.asp

[11] See Gauri, V. and P. Khaleghian (2002)

countries, as well as sub-national data; d) it can serve as a proxy for openness to engage with donors, as most immunisation interventions involve international, bilateral or NGO agencies. The rate of immunisation is also being used as an indicator for the Millennium Challenge Account. The other composite variables for willingness are as follows:

- *Willingness 6*: Rate of Immunisation and Female/Male Life expectancy ratios added and standardized.
- *Willingness 7*: Rate of Immunisation, the Ratio of Public Health Spending per GDP divided by Tax per GDP, and the percent of Females in Government Ministry Offices.
- *Willingness 10*: Rate of Immunisation and percent of Females in Government Ministry Offices.
- *Willingness 15*: Immunisation Rates combined with Voice and Accountability.

24. *Additional measures considered*. These were also tested as proxies for willingness but were discarded for a variety of reasons*:*

- *Percentage of Government Spending on Social Services*: The most recent data available was six years old.
- *Percentage of Government Spend on Education*: The data set available is missing too many data points to use.
- *Gini and Education Gini Indexes*: Measures of income and educational inequality were initially considered a good proxy for government willingness. However, these types of measures are the result of decisions made a long time ago. Additionally, the education Gini does not have great coverage so it was not used in constructing the indexes.
- *Literacy Rate*: An indicator measuring literacy in adults aged 15 and over inevitably will not be responsive to current government willingness.
- *Public education expenditure as a percentage of GDP*. The data set available is missing too many data points to use.
- *NGO's per million population*. This variable was debated as to whether it showed willingness of donors and others to cooperate with non-state actors vs. unwillingness of a particular government to expend revenues for development. The coverage was more limited than some of the other indicators.

V. Two composite indexes of capacity-willingness

25. *Out of a total of 23 possible combined capacity and 15 possible combined willingness indexes tested, this paper examines two sets of composite*

indexes in more depth[12]*.* We do not propose that either of these two sets should be considered the only quantitative bar by which to measure a state's fragility. But for our purposes, these indexes provided the opportunity to quantify capacity and willingness through: a) simply constructed indicators consisting of objective variables that have been previously assessed in academic literature; b) include good proxies because of reasonable availability of data, the differentiation they afford between countries and the sensitivity of the factor to policy changes.

26. *The two combined indexes for capacity are: State Capacity 19*[13] *and Tax and Government Effectiveness*. The primary measure forming the matrix of capacity is the constraints on the government indicating checks and balances. This political measure (POLCON V) is an objective one. Generally, liberal democracy would be the desired institutional arrangement for advancement, however empirical evidence shows that until democracy is well embedded (Hegre et al, 2001 and Reynal-Querol, 2002) - conflict and insecurity are major hazards. Bueno de Mesquita and Smith (2004) devise a formal model showing that the US is more likely to give aid to countries where there are few constraints and the power is in the hands of a few that can be 'compelled' to carry out specific policies. Though it may not be the overall goal of development, it might be more efficacious in the long run to have fewer constraints, and countries undergoing transitions from autocracies to embedded democracies will have the further hazard of instability and political conflict.

27. *As previously mentioned, a great deal of research has been done on fertility rates and growth; alternately causal and consequences of a 'poverty trap'* (Feng, Kugler, and Zak 2000). Lower fertility rates are highly indicative of social capital advancement. The measure is accurate, objective and widely available. If what Kremer (2003) claims from his empirical work is true, then temporarily increasing access to educational opportunities might permanently reduce inequality.

28. *A third primary component of the capacity indicator chosen is FDI inward stocks per GDP*. This objective measure not only indicates degree of transparency and stability that enables investment, but measures the control the central government has over a country's financial resources. Certainly countries with low stability and no rule of law will have little foreign investment, however, a high level of FDI stocks to GDP shows that the financial resources are not entirely in the hands of the home government. De Soysa and Wagner use this measure and openness of trade to show that globalisation does not cause conflict or inhibit development.

29. *Lastly, GDP per capita is an obvious measure for advancement and financial aspects of a society that is concrete and affected by policy*. The measure that closely follows this and can capture technological

[12] For a complete listing of all composite indexes see Annex 3.
[13] Which include POLCON, fertility rates, FDI per GDP and GDP per capita.

advancement is number of phones and mobiles per 1000 populations and should be further explored as a proxy for advancement in overall prosperity and in technical innovation. Though one of the indexes (Capacity 12, Figure 9) adds this measure to the above mentioned four variables, it does not particularly add to the information when with GDP per capita. Though correlation and Spearman tests showed the measures to vary independently, factor analysis and principal components analysis did not show it to be an independent factor.

30. *The Contract Intensive Money measure* (Clague et al 1999) was also incorporated in the Capacity 22 index (Figure 10, Annex 3). This could conceivable improve the differentiation between the more advance countries in the 'high capacity/high willingness quadrant. The alternate completely objective measure to government structural constraints is the Data Base for Political Institutions from the World Bank (Beck et al 2001), though this measure contains 100 variables, certain components might be unpacked to test for capacity. Institutional measures such as this one might be explored as willingness measures as well in the sense of liberalizing institutions and sharing wealth.

31. *In terms of the willingness indexes this paper discusses two in depth, one is Government Willingness 10*[14] *and the other is a combination of Immunisation rates and the World Bank's Voice and Accountability.* Our research into good proxies for willingness has taken us to the discussion around the role of women in government. If nascent research indicates that corruption is less acceptable to females and that women leaders are less likely to opt for violence (though research shows that in more equal societies, both males and females are less likely to choose political violence), then governments can legislate mandatory quotas. In an IRIS study, Grootaert and Van Bastelaer (2002: p. 15) conclude that 'women and their associations were found to be consistent diffusers of information and technology, and able to tap into and generate social capital.' Measures of women's roles in society are increasingly shown to be important as baseline development indicators by government and non-governmental organizations (Cheema and Maguire, 2001).

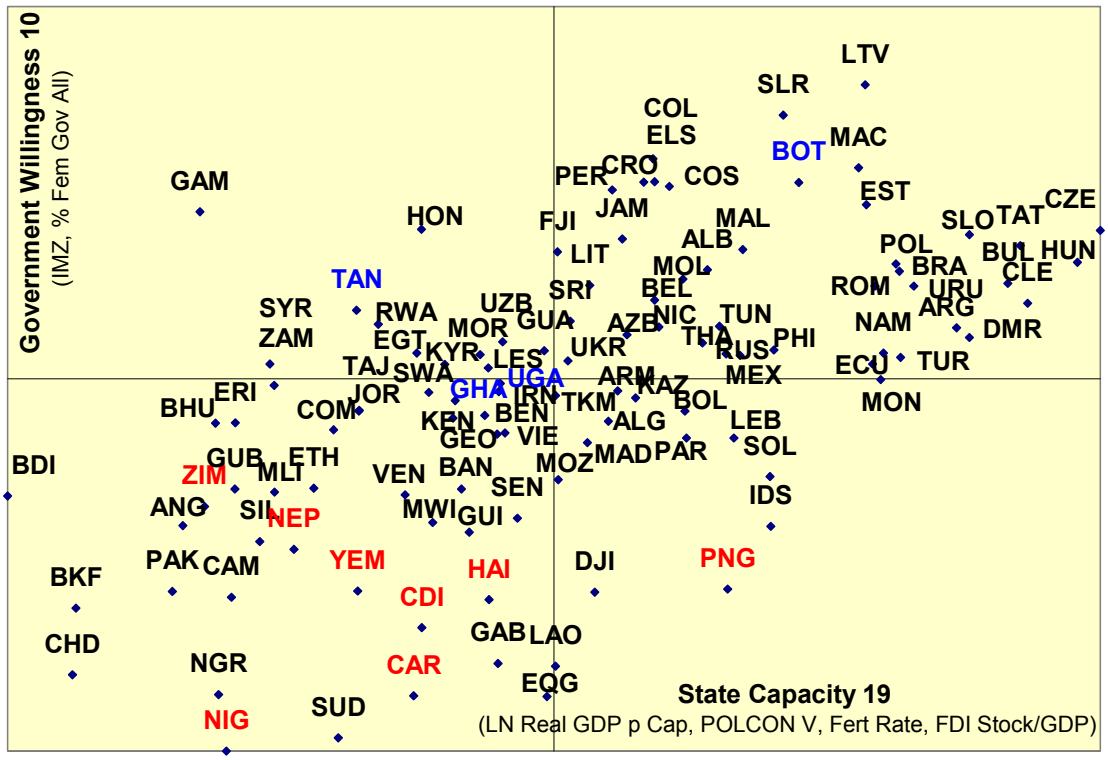
32. *One of the most interesting and widely available measures is the life expectancy ratio*. When combined with Immunisation rates (IMZ) this measure differentiates between countries very well. Studies by the World Health Organization show that the gap between female and male life expectancy widens as countries develop because men's mortality rates decline more slowly than women's. However, anomalies in the African nations and places like the former Soviet countries occur due to such factors as high alcohol related deaths among younger men and AIDS which affect males most prominently giving a false picture of advancement. In these cases, the opposite ratio (Male/Female Life Expectancy) might be indicative of advancement in the mental and physical health arenas, and in jobs for the men.

[14] Comprised of immunisation rates and the percentage of women in government.

33. *Alternately, health care spending per tax when combined with immunisation rates also differentiate between nations* and the overall percentage of women in ministerial positions distinguishes well between countries as shown in Figure 8, Annex 3. Social spending is a direct result of government policy as are immunisation rates.

34. *Precisely why women in power could indicate more secure, transparent and socially advanced societies is a subject still under debate* and only recently being explored on a more systematic and scientific basis. The purpose of this exercise was to identify objective, unbiased measures that can distinctly differentiate between developing countries, are widely available, sensitive to policy and vary quickly over time. Figures 6 and 8, show that these objective indicators do illustrate change.[15] Theoretical and empirical studies show what policies affect each of these individual indicators that combine to form our simple capacity and willingness measures. An infinite number of combinations of the individual variables are possible after factor analysis, principal component tests, and correlation tests are performed to determine if the measure combined are in fact measuring different aspects of development. Only a few of the graphs of some forty different composite measures are shown here. The final choice is a subjective one from the area experts who understand logically in which quadrant each of the measured states should fall.

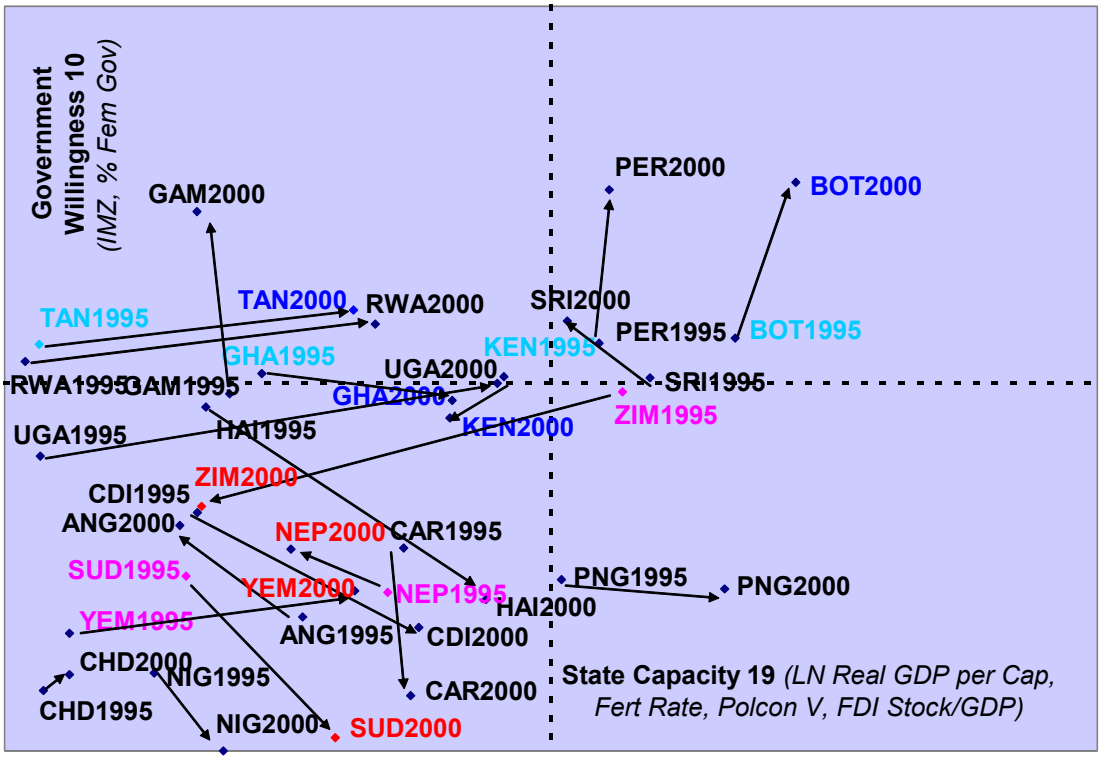
Figure 4: Government Willingness 10 vs. State Capacity 19



[15] The 1995 composite measures are exclusively from 1995, however, the 2000 measures actually have some measures from 2001-3. These composite should be more precisely matched, though we originally wanted the latest ones available.

35. *Figure 4 shows a logical distribution of countries resting above and below the median levels* (indicated by the cross hair lines) *and well differentiated*. Some of the better performing countries are shown in blue and the poor performers are show in red as in Figure 6. The indicators for willingness are variables sensitive to policy (Immunisation and % Women in Government Ministry), the capacity measure can at minimum show change over short time-periods as indicated in Figure 5 as well as point to specific areas needing attention such as social capital or investment. Kremer (2002) claims that temporarily providing access to educational opportunities can permanently reduce inequality. Kremer and Feng, Kugler and Zak (2000) show that higher educated individuals have fewer children who in turn are also likely to be better educated.

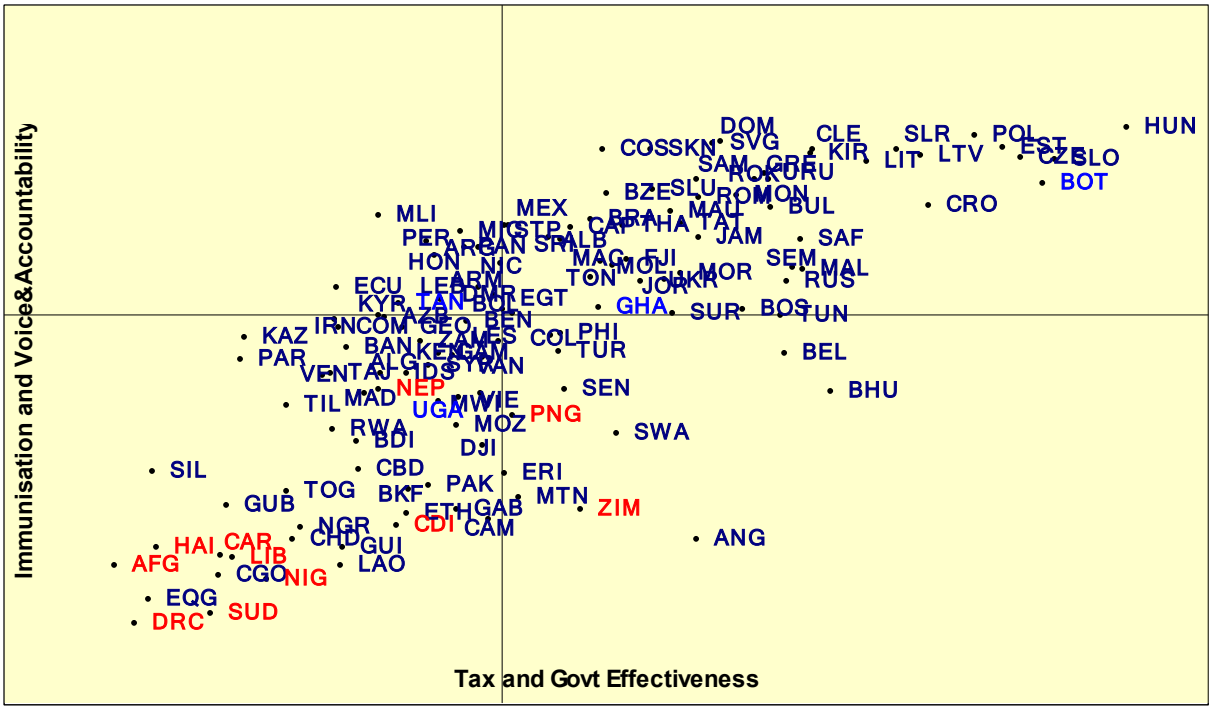
Figure 5: Government Willingness 10 vs. State Capacity 19 1995-2000



36. *Figure 5 shows the change over time*. From 1995-2000, Zimbabwe takes a hit in both the capacity and willingness arenas. The simpler measure in the Annex 3 (Figure 8) comprised of only two measures for capacity and two for willingness also show Zimbabwe's demise over a five-year period. Also striking is Nepal's precipitous fall in Figure 8. Figure 5 (the more complex measures) shows a more subtle change in Nepal, with a decrease in capacity, but a slight increase in willingness. Uganda improves almost to the median for capacity and into a new quadrant past the median for willingness (cross hairs are median values for all countries for the year 2000, the x and y axis are standardized 0-1). Examination of

the countries individually from the practitioners' vantages can tease out the logic of the measures.

Figure 6: Tax and Government Effectiveness vs. Immunization and Voice and Accountability



37. *An alternative combination of composite indexes, with immunisation, voice and accountability in the willingness axis, and tax and government effectiveness in as proxies of capacity,* is shown in Figure 6 above. The above country codes in red signal those that are normally considered fragile states, whereas those in blue are considered 'good performers' by the international community. The lines indicate the medians. The voice and accountability aggregate indicator overwhelmingly looks at political and civil rights, representation and political systems. There is only a single component that assesses 'democratic accountability' but bases it on the likelihood that a government will fall, peacefully or violently. So accountability is here understood as the frequency of regime change. The aggregate indicator on government effectiveness is very focused on policy and bureaucratic capacity. An interesting measure is that of 'institutional failure' or a deterioration of government capacity to cope with national problems as a result of institutional rigidity that reduces GDP growth rate by 1% during any 12-month period. It also includes a couple of interesting measures under non-representative sources that look at the quality/distribution of public services and the trust in police as proxies[16].

[16] For a detailed discussion of the composite measures of both Voice and Accountability and Government Effectiveness, please see Kaufmann et al (2002).

VI. Conclusion

38. *Social scientists have come up with a wide array of quantitative indicators to try to measure variations in state capabilities*[17], but this type of exercise is plagued with three main difficulties: a) most aggregate figures used tell more about the assignment of resources than their actual use, b) many indicators do not distinguish effectively between social and material resources and state abilities to extract or use those resources, c) most quantitative measures of state capacity fail to assess other elements of social control such as participation and autonomy. It is therefore very important to understand the political economy reasons behind capacity problems and some of the contextual difficulties faced by difficult environments.

39. *The indicators proposed offer some insights into the nature of policy prescriptions that promote good performance by highlighting key problematic areas, either on the willingness or capacity side*. Moreover, each of the indicators are objectively measured and not subject to possible bias or moral hazard.

40. *An additional line of inquiry would be to test the predictive values of the indices described here*. Pulling the data together for a few more years over time would likely allow that. If aid were to be used as the independent variable, Brautigam and Knack (2004) have done some interesting work. Also, work in progress by Bueno de Mesquita and Smith show that the element of political discretion (both from donors and recipient countries) limits the predictive power of certain variables.

41. *State strength is a complex, multifaceted concept that involves political motivation as well as institutional capacity*. Fragility is an evolving quality and cannot be meaningfully assessed independent of context and the dynamics of society-state relations. Therefore it seems necessary to delve deeper into the notion of context and a more differentiated typology for more effective policy responses. The measurement approach presented here is intended as a tool to inform decision-making on responses to difficult environments for better poverty reduction outcomes. Such measures are not intended to form a list of difficult environments. Other diagnostic tools will be just as important, particularly context-specific political analysis.

[17] Several authors have attempted to operationalise the notion of state capacity as the ratio between actual extraction and expected extraction. For a discussion see Migdal (1988), 283.

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ANNEX 1: SOURCES OF DATA

Indicator [*CODE*]	Period	N/146	Source	Notes on data
% Female in All Government Ministry Offices ***[%FnGovALL]***	1998	132	UN WISTATS United Nations Women's Indicators and Statistics Data Base	Theoretically, greater female representation in higher offices decreases interstate conflict levels/likelihood. Advancement of perhaps other sorts? Soft power? Mary Caprioli, (2000) 'Gendered Conflict,' *Journal of Peace Research,* Vol 37, no. 1, 53-68 Patrick Regan and Aida Paskeviciute, 'Women's Access to Politics and Peaceful States,' *Journal of Peace Research* (2003), Vol 40, No. 3, 287-302 Knack et al, also maintain this is a good measure of corruption. Lower corruption among females. This could be temporary…. Of course.
% Female in Economic Ministry Offices ***[%FnEconGov***]	1998	132	UN WISTATS	Cheema and Maguire (2001) 'Governance for Human Development: The Role of External Partners', *Public Admin. Dev.* 21:201-209, suggest women in office, voting, etc. as quantitative baseline and development indicators.
% Female in Social Ministry Offices ***[%FnSocGov]***	1998	132	UN WISTATS	IRIS study: Grootaert and Van Bastelaer (2002) 'Understanding and Measuring Social Capital' – "Women and their associations were found to be consistent diffusers of information and technology, and able to tap into and generate social capital." p. 15
% immunisation coverage ***[IMZs2003]***	2003	146	WHO UNICEF Workbook: Estimates updated October 2003	A mean for each country was taken of estimated % coverage for the DTP (Diphtheria, Tetanus and Pertussis), MCV (Measles) and Pol 3 (Polio) vaccines. In all cases the mean was based on estimates for all three vaccines. Access dataset at: http://www.who.int/vaccines-surveillance/DataTable.htm
% of budget spend on Education	1998-2000	71	UNDP Human Development Indicators 2004. See: http://hdr.undp.org/statistics/data/	Includes both capital expenditures (spending on construction, renovation, major repairs and purchase of heavy equipment or vehicles) and current expenditures (spending on goods and services that are consumed within the current year and would need to be renewed the following year). It covers such expenditures as staff salaries and benefits, contracted or purchased services, books and teaching materials, welfare services, furniture and equipment, minor repairs, fuel, insurance, rents, telecommunications and travel.
% of Government spend on social services	1998	48	WDI 2000: International Monetary Fund, Government Finance Statistics Yearbook and data files, and World	Social Services refers to education, health, social security, welfare, housing and community amenities. It also covers compensation for loss of income to the sick and temporarily disabled; payments to the elderly, the permanently disabled, and the unemployed; family, maternity, and child allowances; and the cost of welfare services such as care of the aged, the disabled, and the children. Expenditures

			Bank and OECD GDP estimates.	relevant to environmental protection are included indistinguishably in this category.
% of total population with access to an improved water source [WaterTP%]	2000	125	WDI: World Health Organization and United Nations Children's Fund, Global Water Supply and Sanitation Assessment 2000 Report.	Access to an improved water source refers to the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring, and rainwater collection. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 litres a person a day from a source within one kilometre of the dwelling.
Child Mortality Rate [CMR]	2002	146	UNSD Millennium Indicators database: United Nations Children's Fund, State of the World's Children Report 2004	Child Mortality rate is the number of children per 1000 live births who will die before their fifth birthday. Note: 'a country's *infant* mortality rate provides a sensitive indicator of broader changes in economic development and material well-being. The forces to which infant mortality rates appear to be sensitive include the quality of a country's medical and public health systems, levels of maternal ad infant nutrition, access to shelter and clean drinking water, and levels of education and literacy.' From State Failure Task Force Report: Phase III Findings.
CIM (Contract Intensive Money) (M2-C)/M2 [CIM2000S]	2000	130	IFS/ WDI	(M2-C)/M2 : Used as a proxy for rule of law in theory, but in fact could measure strength of institutions more generally. CLAGUE, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson (1999) 'Contract-Intensive Money: Contract Enforcement, Property Rights, and Economic Performance,' *Journal of Economic Growth*, 4: 185-211.
FDI per Capita Standardized [FDIsPC2000]	1998-2000 and 2001(pop)	122	World Resources WDI	Data Collected through the World Resources Institute for 1998-2000 for FDI from World Bank, SIPRI, UN Conf. On Trade and Dev., and ISO http://pubs.wri.org/datasets.cfm?SortBy=1 **Macro/Transparency**
FDI Stock per GDP Standardized [FDIinStock/GDPs]	2000	139	UNCTAD	De Soysa and Wagner claim that FDI relative to local economic activity is a good gauge of the relative impact of foreign versus domestic power. De SOYSA, Indra and Angelika Wagner, (2003) 'Global Market, Local Mayhem? Foreign Investment, Trade Openness, State Capacity, and Civil War, 1989-2000, International Development Research Center (IDRC) Paper http://www.dgroups.org/groups/globalization/docs/JCR-5-3-03.pdf
Female/Male Life Expectancy Ratio [MflEx] - standardised [FMLexps]	200	145	WDI	World Health Organization. 'Studies have shown consistently that as countries get richer, male mortality tends to decline less than female mortality. This WHO study shows that the same patterns hold when healthy life expectancies are measured.'

- normalised [FMLexpN]				http://www.who.int/inf-pr-2000/en/pr2000-life.html
Gini Index [Gini]		98	WDI: World Bank staff estimates based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study database.	Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. Access dataset at: http://www.worldbank.org/poverty/data/2_8wdi2002.pdf
Government Effectiveness [GE]	1996-2002	146	World Bank Governance Indicators (KKZ)	Includes rankings from five sources: State Failure Task Force, Global Insight, Economist Intelligence Unit, Political Risk Services, and World Markets Online. Additionally it includes the following non-representative sources: Afrobarometer, Business Environment and Enterprise Performance Survey, Business Environment, Risk Intelligence, Freedom House, World Economic Forum, Latinobarometro and Institute for Management Development.
Greed	2004	161	See http://www.worldbank.org/research/conflict/papers/greedgrievance_23oct.pdf	Natural Commodity Exports divided by Total Exports. See Collier and Hoeffler (2004).
Internet Users per 1000 Population: - standardised [InterUseS2001] - normalised [InterUseN2001]	2000	104	World Resources Institute	Data Collected through the World Resources Institute for 1998-2000 for FDI from World Bank, SIPRI, UN Conf. On Trade and Dev., and ISO http://pubs.wri.org/datasets.cfm?SortBy=1 Technological Advancement This variable has high correlation with CPI. Also, greater number of governmental websites per country indicates greater openness/transparency. Such things as GDP per capita and FDI/GDP contribute to these web indicators. La Porte, Demchak, and De Jong, (2002) 'Democracy, Bureaucracy in the Age of the Web Empirical Findings and Theoretical Speculations', *Administration and Society* 34 (4): 441-446
Inverse of the Fertility Rate [InFerRates2000]	2000	143	WDI (This was inversed and standardized so that higher value indicates	Proxy for Poverty Trap, and Higher **Education** <-> lower fertility rate. This seems to be an extremely good proxy for education dispersion and development Yi Feng, Jacek Kugler and Paul J. Zak (2000) 'The Politics of Fertility and Economic Development,' *International Studies Quarterly* 44, 667-693

			greater capacity)	Michael Kremer and Daniel Chen (2002) 'Income Distribution Dynamics with Endogenous Fertility,' *Journal of Economic Growth*, 7, 227-258
Literacy Rate [LitRate 2001-2]	2000-2002	104	WDI: United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.	Adult literacy rate is the percentage of people ages 15 and above who can, with understanding, read and write a short, simple statement on their everyday life.
Natural Log Real GDP per Capita Standardized [LGDPs2000]	2000	144	PWT WDI CIA	Simple proxy for security. Literature shows that as countries more prosperous, all types of internal conflicts are less likely. Fearon and Laitin (2003) 'Ethnicity, Insurgency, and Civil War,' *American Political Science Review* 97 (1): 1-16.
NGO's per Million Population [NGO2000s]	2000	123	World Resources Institute	Data Collected through the World Resources Institute for 1998-2000 for FDI from World Bank, SIPRI, UN Conf. On Trade and Dev., and ISO http://pubs.wri.org/datasets.cfm?SortBy=1
Open [OpenS2000]	2000	115	Penn World Tables	State Failure Task Force Results: Degree of Trade Openness.
Phones and Mobile Phones per 10000 population [PhonMob2002S]	2002	144	WDI Standardized	Correlated to GDP per Capita, but varies independently. Do not have literature on this yet. Use as technological penetration/openness. High coverage.
POLCON III and POLCON V [PolconIII, PolconV]	1971-1998	172	Henisz (2004)	Panel dataset containing information on nine different fiscal policies including three subcategories of expenditure (goods and services, subsidies, and capital expenditure) and six subcategories of revenue (non-tax, taxes on goods and services, taxes on capital and profits, taxes on trade, social security taxes, and other taxes) all normalized by a country's level of gross domestic product (GDP).
Public Education Expenditure % of GDP	1999-2001	107	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.	Public expenditure on education consists of public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels.
Public Health Expenditure / TaxGDP [Ph/TGDPs]	2002	133	WDI	Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds.
Public Health per	2001	128	WDI	Public expenditure management as part of good governance.

GDP/Tax per GDP				Grindle, Merilee (2002) 'Good Enough Governance: Poverty Reduction and Reform in Developing Countries', World Bank PRG
RPC 1995/2000 [RPCn1995]	1995/ 2000	83	Claremont/NSF	A measure of states ability to extract resources – predicted revenues over actually tax revenues. Relative Political Capacity, Marina Arbetman and Jacek Kugler (eds.), Political Capacity and economic Behavior (Boulder, 1997): Yi Feng, Jacek Kugler and Paul J. Zak, "The Politics of Fertility and Economic Development," *International Studies Quarterly* (2000) 44, 667-693 .
Tax revenue as % of GDP [TaxGDP]	2000-2002	66	WDI: International Monetary Fund, Government Finance Statistics Yearbook and data files, and World Bank and OECD GDP estimates.	Tax revenue comprises compulsory transfers to the central government for public purposes. Compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue. Data are shown for central government only. Data used is most recent available between 2000-2002.
Voice and Accountability [V&A]	1996-2002	146	World Bank Governance Indicators (KKZ)	Looks at political and civil rights, representativeness and the level of democracy in political systems. Source include State Failure Task Force, Economist Intelligence Unit, Freedom House, Human Rights Database, Political Risk Services, Reporters Without Borders, World Markets Online. Non-representative sources include: Afrobarometer, Freedom House, Gallup, World Economic Forum, Latinobarometro, and Institute for Management Development.

ANNEX 2: METHODOLOGICAL NOTES

Standardisation

The data for each indicator were standardised using the following formula to give values within the range 0 – 1, where the lowest value in the data set is 0 and the largest is 1.

$$\text{Standardised Value} = \frac{(\text{Raw Value} - b)}{(a - b)}$$

Where: a = Highest Value in Data Set
b = Lowest Value in Data Set

X-Axis: Capacity

- Tax revenue as percentage of GDP
- Percentage of population with access to an improved water source
- Mean Immunisation coverage for DTP, MCV and Pol3 vaccines
- Child Mortality Rate
- Likelihood of State Failure Event
- Government Effectiveness Index (KKZ)
- LN Real GDP per Capita
- POLCON V (Political Constraints)
- Inverse of the Fertility Rate
- FDI per Capita
- FDI Stock per GDP
- Open
- Greed (Natural commodity exports/Total Exports)
- CIM (Contract Intensive Money)
- Phones Mobiles per 1000 population
- % Females in Social Ministry Offices
- % Females in Government Total
- Relative Political Capacity
- Internet Users per 1000 population

Y-Axis: Willingness

- Mean Immunisation coverage for DTP, MCV and Pol3 vaccines
- Voice and Accountability (KKZ)
- Percentage of budget spend on Education
- Percentage of Government spend on social services
- Gini Index
- Literacy Rate
- Public Health Expenditure: percentage of GDP
- Public Education Expenditure: percentage of GDP
- Public Health expenditure as percentage of Tax/GDP
- Female/Male Life Expectancy
- NGO's per Million Population
- % Females in Government Total

Universe: 146 Countries Eligible for Borrowing from the World Bank[18]
(as of July 1, 2004)

AFG	Afghanistan
ALB	Albania
ALG	Algeria
ANG	Angola
ANT	Antigua and Barbuda
ARG	Argentina
ARM	Armenia
AZB	Azerbaijan
BAN	Bangladesh
BEL	Belarus
BZE	Belize
BEN	Benin
BHU	Bhutan
BOL	Bolivia
BOS	Bosnia and Herzegovina
BOT	Botswana
BRA	Brazil
BUL	Bulgaria
BKF	Burkina Faso
BDI	Burundi
CBD	Cambodia
CAM	Cameroon
CAP	Cape Verde
CAR	Central African Republic
CHD	Chad
CLE	Chile
CHI	China
COL	Colombia
COM	Comoros
DRC	Congo, Dem. Rep.
CGO	Congo, Rep.
COS	Costa Rica
CDI	Cote d'Ivoire
CRO	Croatia
CZE	Czech Republic
DJI	Djibouti
DOM	Dominica
DMR	Dominican Republic
ECU	Ecuador
EGT	Egypt, Arab Rep.
ELS	El Salvador
EQG	Equatorial Guinea
ERI	Eritrea
EST	Estonia
ETH	Ethiopia
FJI	Fiji
GAB	Gabon
GAM	Gambia, The
GEO	Georgia
GHA	Ghana
GRE	Grenada
GUA	Guatemala
GUI	Guinea
GUB	Guinea-Bissau
GUY	Guyana
HAI	Haiti
HON	Honduras
HUN	Hungary
IND	India
IDS	Indonesia
IRN	Iran, Islamic Rep.
IRQ	Iraq
JAM	Jamaica
JOR	Jordan
KAZ	Kazakhstan
KEN	Kenya
KIR	Kiribati
ROK	Korea, Rep.
KYR	Kyrgyz Republic
LAO	Lao PDR
LTV	Latvia
LEB	Lebanon
LES	Lesotho
LIB	Liberia
LIT	Lithuania
MAC	Macedonia, FYR
MAD	Madagascar
MWI	Malawi
MAL	Malaysia
MDV	Maldives
MLI	Mali
MSI	Marshall Islands
MTN	Mauritania
MAU	Mauritius
MEX	Mexico
MIC	Micronesia, Fed. Sts.
MOL	Moldova
MON	Mongolia
MOR	Morocco
MOZ	Mozambique
MYA	Myanmar
NAM	Namibia
NEP	Nepal
NIC	Nicaragua
NGR	Niger
NIG	Nigeria
PAK	Pakistan
PAL	Palau
PAN	Panama
PNG	Papua New Guinea
PAR	Paraguay
PER	Peru
PHI	Philippines
POL	Poland
ROM	Romania
RUS	Russian Federation
RWA	Rwanda
SAM	Samoa
STP	Sao Tome and Principe
SEN	Senegal
SEM	Serbia and Montenegro
SEY	Seychelles
SIL	Sierra Leone
SLR	Slovak Republic
SLO	Slovenia
SOL	Solomon Islands
SOM	Somalia
SAF	South Africa
SRI	Sri Lanka
SKN	St. Kitts and Nevis
SLU	St. Lucia
SVG	St. Vincent and the Grenadines
SUD	Sudan
SUR	Suriname
SWA	Swaziland
SYR	Syrian Arab Republic
TAJ	Tajikistan
TAN	Tanzania
THA	Thailand
TIL	Timor-Leste
TOG	Togo
TON	Tonga
TAT	Trinidad and Tobago
TUN	Tunisia
TUR	Turkey
TKM	Turkmenistan
UGA	Uganda
UKR	Ukraine
URU	Uruguay
UZB	Uzbekistan
VAN	Vanuatu
VEN	Venezuela, RB
VIE	Vietnam
YEM	Yemen, Rep.
ZAM	Zambia
ZIM	Zimbabwe

[18] World Bank (2004), p.124-125.

ANNEX 3: LISTING OF ALL COMPOSITE INDEXES CONSTRUCTED

Capacity	***CapS 1***	***CapS 2***	***CapS 3***	***CapS 4***	***CapS 5***	***CapS 6***	***CapS 7***	***CapS 8***	***CapS 9***
Security	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**	**LGDPs2000**
Effec Delim of Pol pwr	**PolconV**			**PolconIII**	**PolconIII**	**PolconIII**	**PolconV**	**PolconV**	**PolconV**
Educ and Soc Capital Proxy	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateS2000**
Macro Econ	**FDlsPC2000**			**FDlsPC2000**	**FDlsPC2000**	**FDlsPC2000**	**FDlsPC2000**	**FDlsPC2000**	**FDlsPC2000**
Soc tec/soc services/Security	**%Fn GovALL**			**%FGovALL**	**%FEconGov**	**%FEconGov**	**%FGovALL**		**%FEconGov**
Technological prog						**InterUseS2001**			**InterUseN2001**
Macro Econ				**OpenS2000**					
Social Programs	**FMLexpS2000**	**FMLexpS2000**							

Capacity	***CapS 10***	***CapS 11***	***CapS 12***	***CapS 13***	***CapS 14***	***CapS 15***	***CapS 16***	***CapS 17***	***CapS 18***
Security	**LGDPs2000**	**LGDPs2000**	**LGDP2000s**	**LGDP2000s**	**LGDP2000s**	**LGDP2000s**	**LGDP2000s**	**FDlnPC2000**	**InvFerRateN**
Effec Delim of Pol pwr	**PolconV**	**PolconV**	**PolconVs**	**PolconVs**	**lnFerRateN**	**PolconVs**	**PolconVs**	**BankLRAn2000**	**%Fn GovALL**
Educ and Soc Capital Proxy	**lnFerRateS2000**	**lnFerRateS2000**	**lnFerRateN**	**lnFerRateN**	**FDlinStock/GDPs**	**lnFerRateN**	**lnFerRateN**	**InvFerRateN**	**TaxGDP**
Macro Econ	**FDlsPC2000**	**FDlsPC2000**	**FDlinStock/GDPs**	**FDlinStock/GDPs**	**PhonMob2002s**	**FDlinStock/GDPs**	**RPCn1995**	**%Fn GovALL**	**PolconV**
Soc tec/soc services/Security	**%FGovALL**	**%FEconGov**	**PhonMob2002s**	**PhonMob2002s**		**lnterUseN2001**		**TaxGDP**	**LGDPs2000**
Technological prog				**%Fn SocGov**		**Greed**		**PolconV**	
Macro Econ	**OpenS2000**					**LitRate2001-2**		**LGDP2000s**	
Social Programs						**TaxGDP**			

Capacity	***CapS 19***	***CapS 20***	***CapS 21***	***CapS 22***
Security	**LGDP2000s**	**LGDP2000s**	**LGDP2000s**	**LGDP2000s**
Effec Delim of Pol pwr	**PolconVs**	**PolconVs**	**PolconVs**	**PolconVs**
Educ and Soc Capital Proxy	**lnFerRateN**	**lnFerRateN**	**lnFerRateN**	**lnFerRateN**
Macro Econ	**FDlinStock/GDPs**	**FDlinStock/GDPs**	**FDlinStock/GDPs**	**FDlinStock/GDPs**
Soc tec/soc services/Security		**InterUseN2001**	**%Fn GovALL**	**CIM2000s**
Technological prog				
Macro Econ				

Willingness	***Wills 1***	***Wills 2***	***Wills 3***	***Wills 4***	***Wills 5***	***Wills 6***	***Wills 7***	***Wills 8***	***Wills 9***
Care for women	**FMLexpS2000**	**FMLexpS2000**	**FMLexpN2000**			**FMLexpS2000**	**IMZn2003**	**IMZn2003**	**PH/TGDPs**
Care for children	**IMZn2003**			**IMZn2003**	**IMZn2003**	**IMZn2003**	**PH/TGDPs**	**PH/TGDPs**	**%Fn GovALL**
NGOs allowed to operate	**NGOn 2000**	**NGOn 2000**			**NGOn 2000**		**%Fn GovALL**		

Wills 10	***Wills 11***	***Wills 12***	***Will 13***	***Will 14***
IMZ2003s	**IMZ2003s**	**IMZ2003s**	**IMZ2003s**	**PH//TGDP**
%Fn GovALL	**FMLexps2000**	**%Fn EconGov**	***Mflex***	
	%Fn EconGov			

ANNEX 4: ADDITIONAL GRAPHS AND TABLES

Figure 6: Immunisation Coverage vs. Tax % of GDP

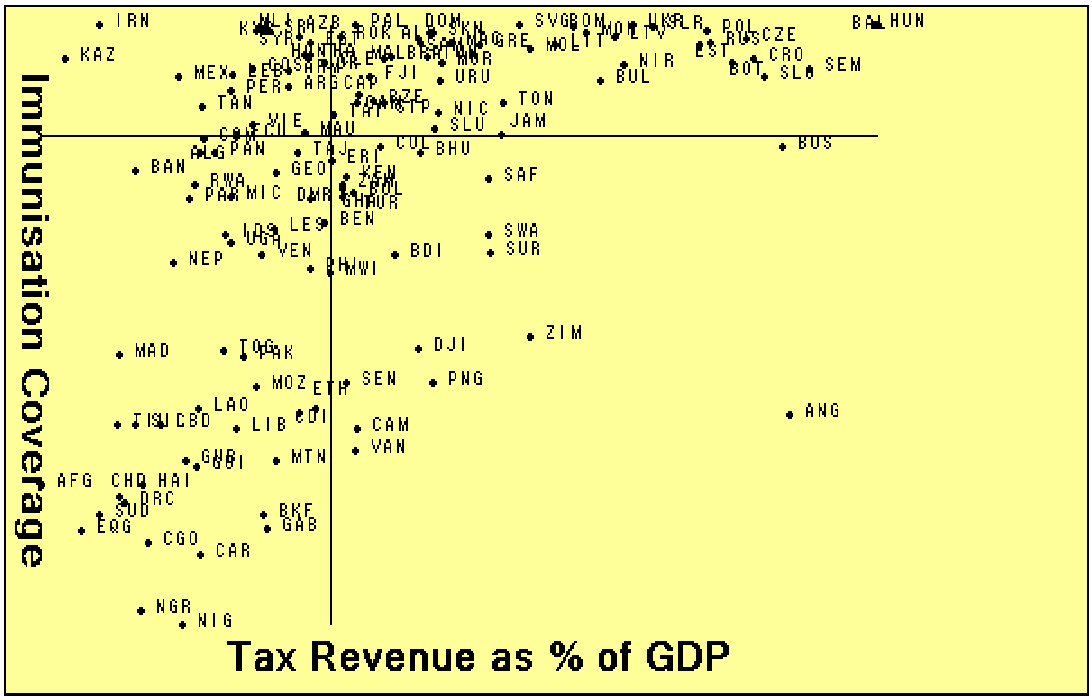

Figure 7: Government Willingness 6 vs. State Capacity 3

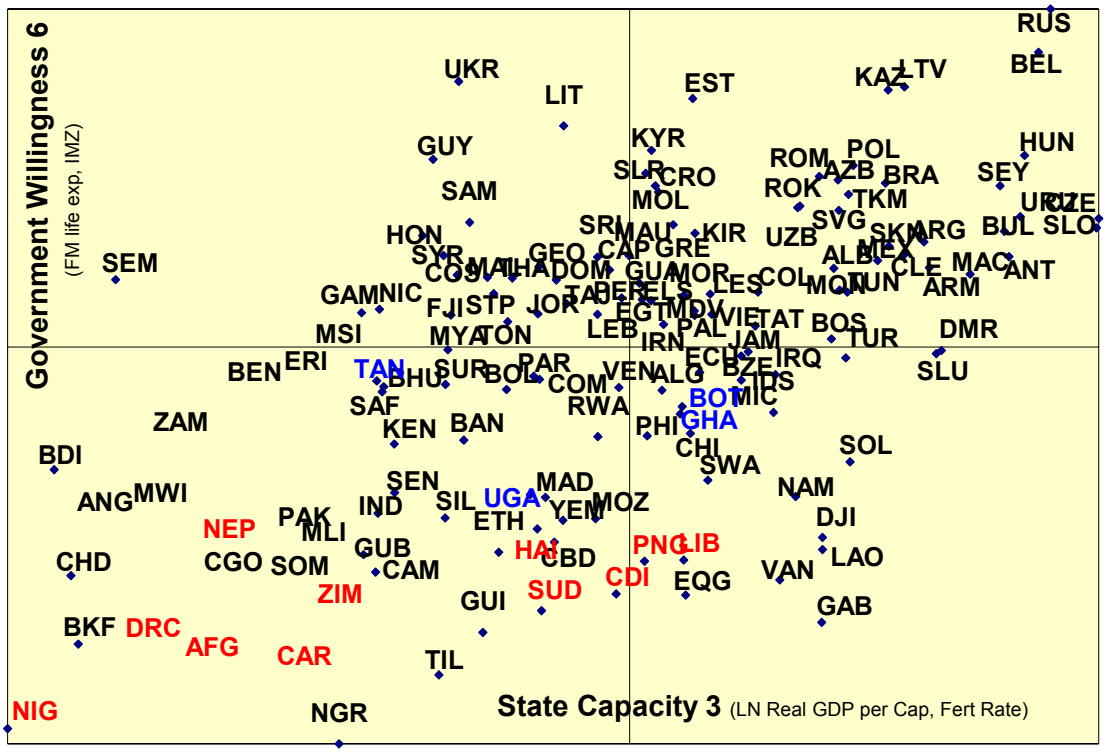

Figure: 8 Government Willingness 6 vs. State Capacity 3 1995-2000

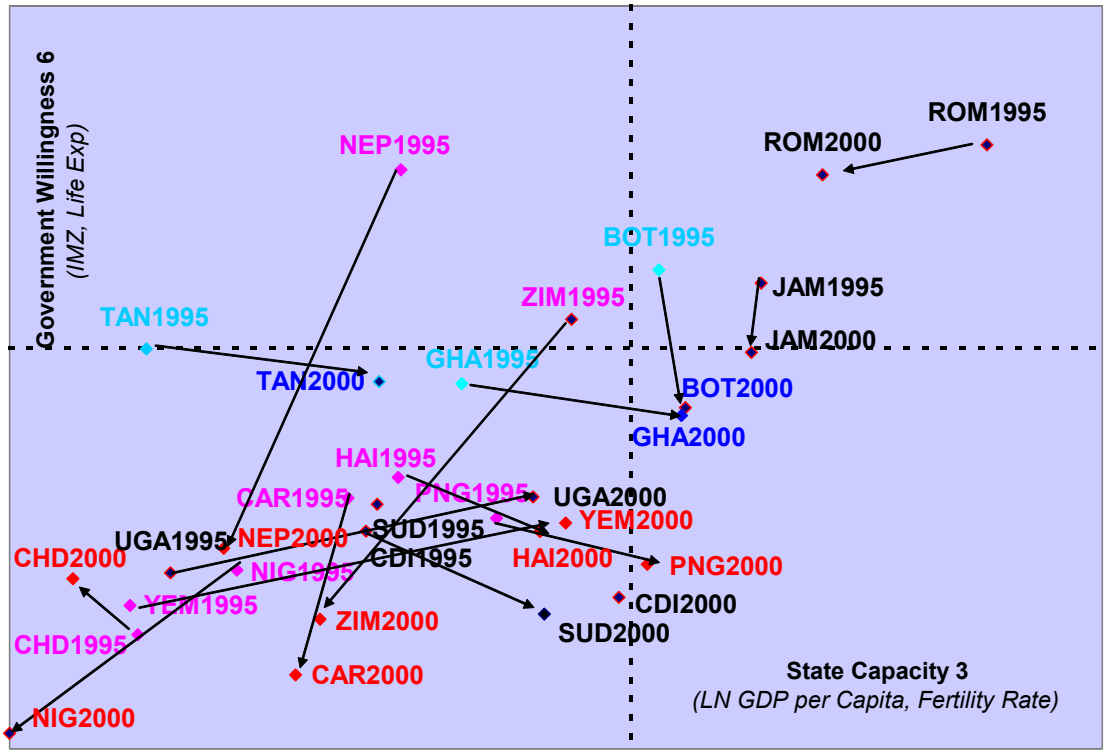

Figure: 9 Government Willingness 9 vs. State Capacity 12

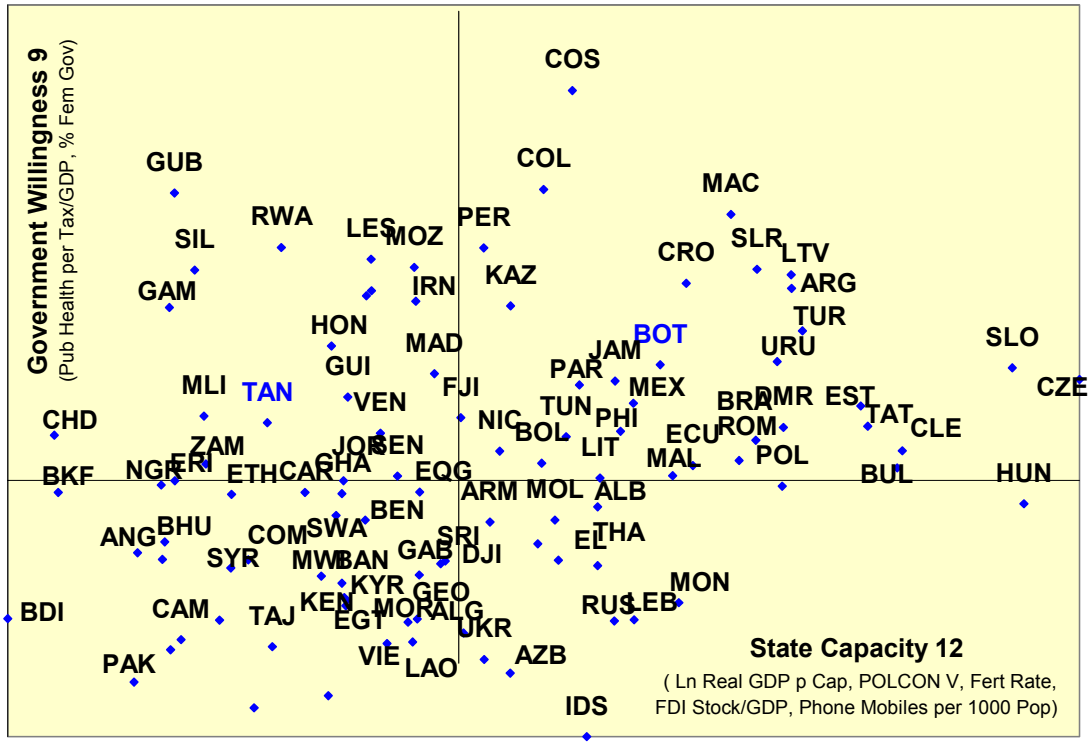

Figure 10: Government Willingness 11 vs. State Capacity 22

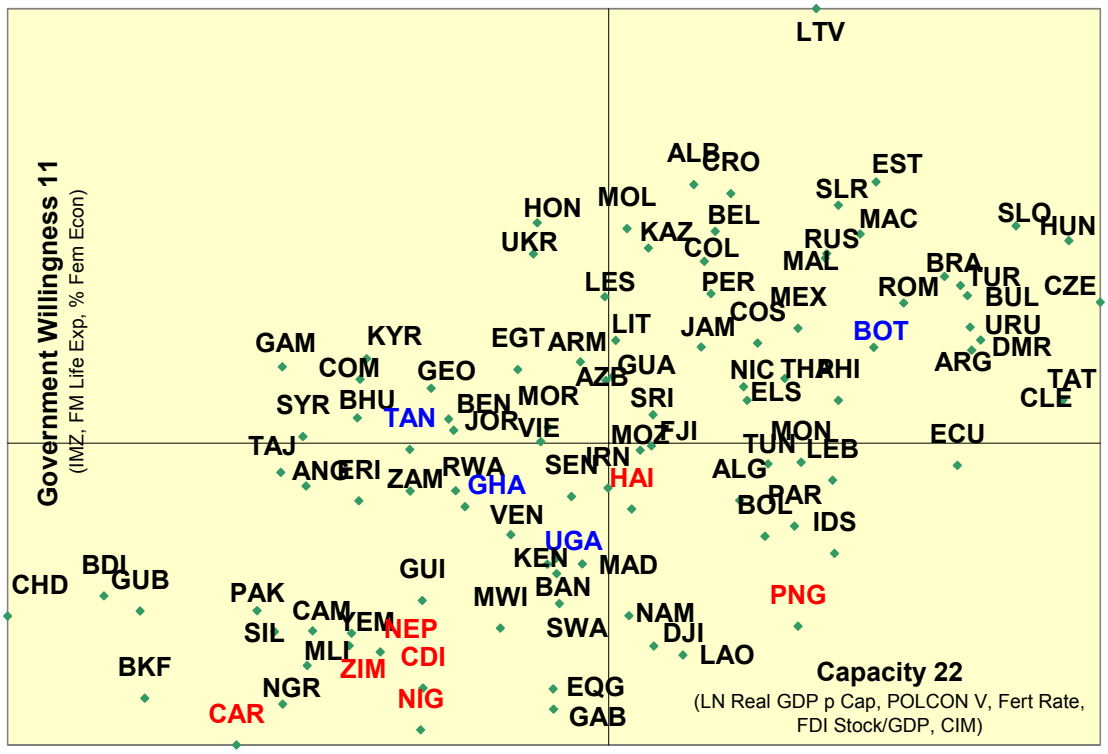

Figure 11: Relative Political Capacity vs. Willingness 9

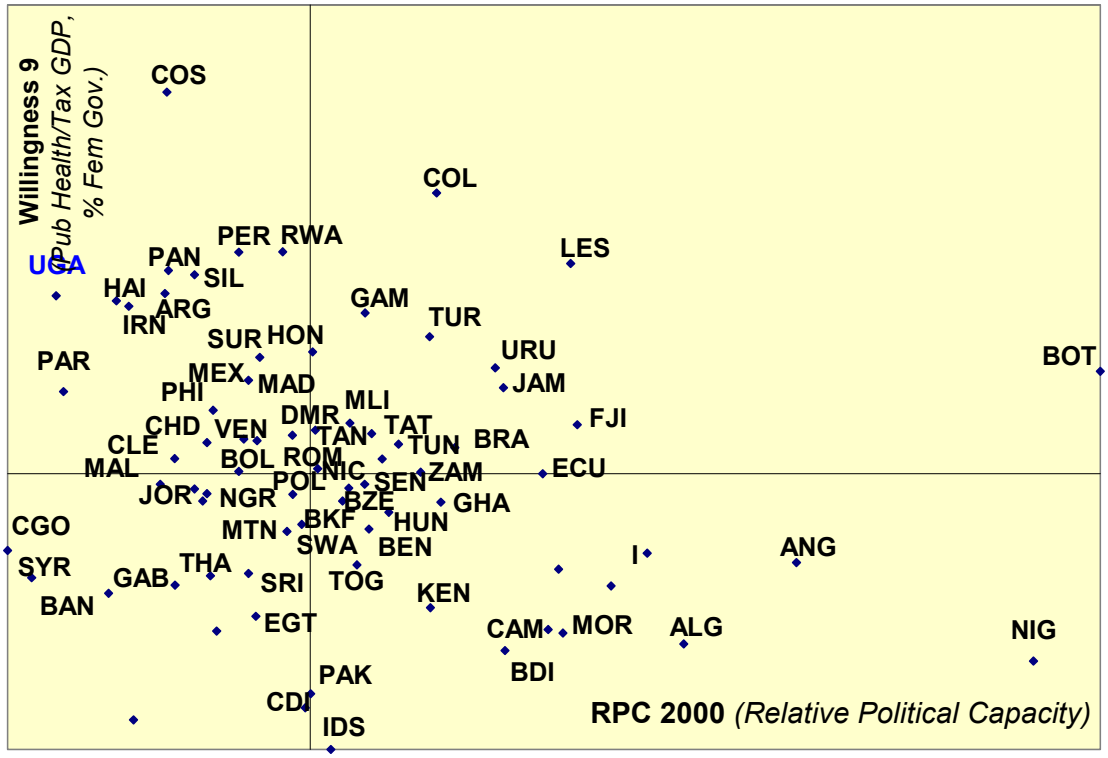

Figure 12: Government Willingness 7 vs. State Capacity 19

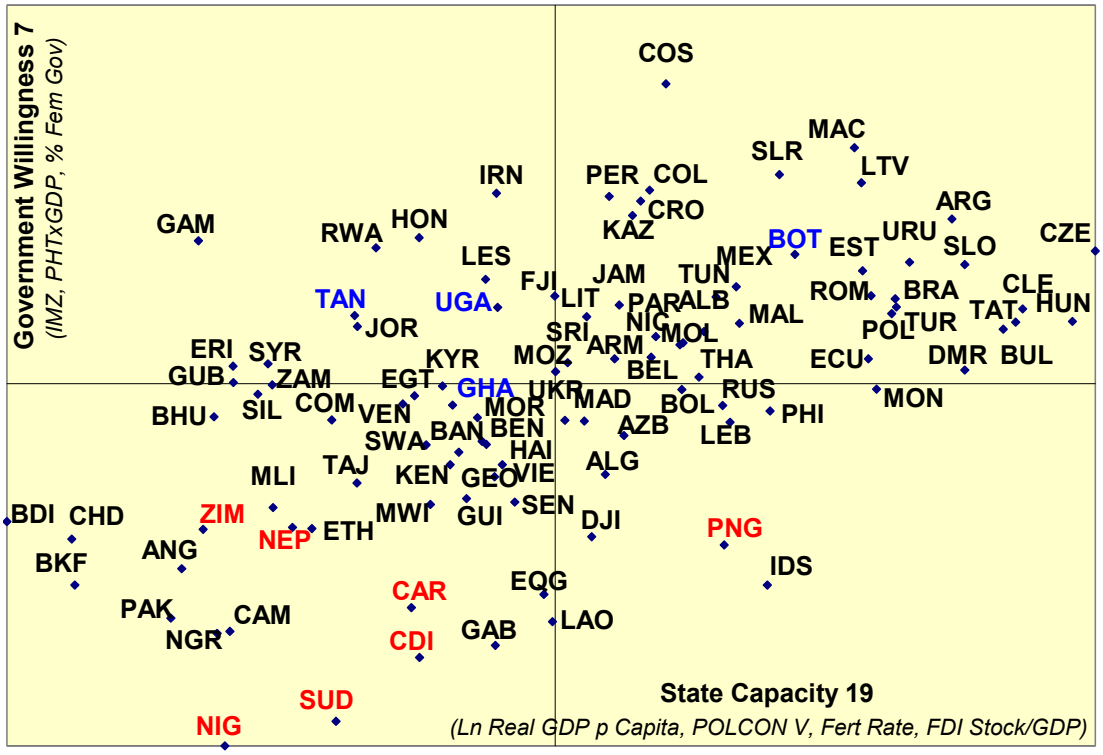

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI per Capita	122	0.117	0.186	0	1
Fertility Rate	143	0.590	0.274	0	1
% Fem in Gov All	132	0.309	0.218	0	1
% Fem in Econ Gv	132	0.259	0.243	0	1
% Fem in Soc Gv	132	0.277	0.281	0	1
Tax GDP	129	0.381	0.222	0	1
Publ Hlth Exp/TxGDP	128	0.377	0.187	0	1
FDI Stock/GDP	139	0.447	0.126	0	1
Open	115	0.258	0.171	0	1
Internet Use per 1000	104	0.075	0.145	0	1
Phone Mobile per 1000	144	0.181	0.209	0	1
POLCON V	121	0.323	0.304	0	0.863
UNHDI	136	0.597	0.263	0	1
Trans Inter CPI	107	0.277	0.192	0	1
Freedom House	144	0.537	0.352	0	1
Gov. Effectiveness	146	0.492	0.205	0	1
LN Read GDP per Capita	144	0.550	0.240	0	1
CIM	129	0.744	0.196	0	1
Capacity 3	143	0.548	0.224	0	1
Capacity 19	113	0.511	0.221	0	1
Capacity 22	108	0.553	0.218	0	1

NGO	123	0.150	0.185	0	1
F/M Life Expectancy	145	0.374	0.168	0	1
Immunisations	146	0.719	0.272	0	1
Willingness 6	146	0.512	0.211	0	1
Willingness 7	116	0.486	0.195	0	1
Willingness 10	132	0.481	0.217	0	1

Table 2: Correlation Matrix

	FDI	Inv. Fe	% Fem	% Fem	% Fem	Tax GI	PbHlth/	FDI St	OPEN	Intern l	Phone	POLCO	UNHDI	TPI CP
FDI	1.00													
Inv. Fert Rate	0.16	1.00												
% Fem Gov	0.28	0.18	1.00											
% Fem Ec Gv	0.16	0.15	0.67	1.00										
% Fem Sc Gv	0.23	0.21	0.60	0.21	1.00									
Tax GDP	0.29	0.26	0.31	0.34	0.01	1.00								
PbHlth/TxGDP	0.06	0.02	-0.10	-0.09	-0.09	-0.42	1.00							
FDI Stock/GDP	0.61	-0.11	0.20	0.14	0.05	0.38	-0.19	1.00						
OPEN	0.23	-0.19	0.24	0.30	0.04	0.48	-0.25	0.46	1.00					
Intern Use	0.60	0.02	0.28	0.33	0.14	0.47	-0.02	0.53	0.59	1.00				
Phone Mobile	0.64	0.29	0.32	0.47	0.03	0.65	0.03	0.43	0.51	0.75	1.00			
POLCON V	0.48	0.08	0.34	0.37	0.00	0.22	0.00	0.28	0.21	0.52	0.52	1.00		
UNHDI	0.58	0.25	0.20	0.34	-0.08	0.39	0.14	0.29	0.36	0.60	0.79	0.52	1.00	
TPI CPI	0.48	0.20	0.28	0.19	0.19	0.47	0.01	0.43	0.46	0.75	0.62	0.33	0.58	1.00
Freedom Hs	0.51	0.28	0.37	0.22	0.26	0.22	0.10	0.21	0.12	0.37	0.47	0.59	0.38	0.39
GE	0.48	0.10	0.23	0.12	0.08	0.28	-0.07	0.45	0.46	0.58	0.46	0.22	0.36	0.54
LN Real GDPC	0.66	0.26	0.24	0.39	0.00	0.45	0.09	0.38	0.35	0.66	0.82	0.53	0.93	0.58
CIM	0.30	0.20	0.05	0.08	-0.13	0.09	0.14	0.04	0.17	0.26	0.38	0.37	0.56	0.15
caps3	0.53	0.78	0.27	0.34	0.13	0.45	0.07	0.18	0.11	0.44	0.71	0.39	0.76	0.50
caps12	0.68	0.47	0.37	0.46	0.07	0.50	0.02	0.42	0.31	0.67	0.85	0.79	0.81	0.57
caps19	0.65	0.50	0.37	0.43	0.08	0.44	0.02	0.39	0.24	0.62	0.76	0.82	0.78	0.53
caps22	0.63	0.45	0.35	0.43	0.02	0.42	0.03	0.37	0.24	0.61	0.75	0.83	0.80	0.51
NGO	0.53	0.07	0.47	0.18	0.25	0.42	0.01	0.46	0.42	0.40	0.47	0.24	0.29	0.44
F/M life exp	0.45	0.36	0.45	0.44	0.15	0.43	0.23	0.10	0.14	0.49	0.63	0.34	0.56	0.43
IMZ	0.37	0.18	0.07	0.13	-0.13	0.41	0.07	0.23	0.35	0.45	0.56	0.33	0.75	0.57
wills6	0.48	0.29	0.23	0.29	-0.04	0.51	0.15	0.23	0.34	0.56	0.71	0.41	0.83	0.64
wills7	0.42	0.22	0.47	0.36	0.15	0.22	0.51	0.16	0.23	0.43	0.55	0.38	0.68	0.53
wills10	0.45	0.24	0.61	0.48	0.23	0.50	0.00	0.30	0.41	0.51	0.62	0.45	0.71	0.61
RPC	-0.07	0.19	0.20	0.10	0.05	0.45	-0.50	0.10	-0.05	-0.12	0.02	0.04	-0.04	0.05

	Freedo	GE	LN Rea	CIM	caps3	caps12	caps19	caps22	NGO	F/M life	IMZ	wills6	wills7	wills10
Freedom Hs	1.00													
GE	0.37	1.00												
LN Real GDPC	0.39	0.33	1.00											
CIM	0.05	0.21	0.49	1.00										
caps3	0.42	0.27	0.81	0.44	1.00									
caps12	0.60	0.38	0.86	0.47	0.84	1.00								
caps19	0.60	0.34	0.82	0.47	0.84	0.99	1.00							
caps22	0.56	0.31	0.83	0.54	0.82	0.98	0.99	1.00						
NGO	0.31	0.25	0.34	0.08	0.27	0.39	0.35	0.34	1.00					
F/M life exp	0.36	0.18	0.64	0.24	0.64	0.62	0.58	0.54	0.32	1.00				
IMZ	0.17	0.37	0.64	0.36	0.53	0.56	0.52	0.56	0.24	0.27	1.00			
wills6	0.28	0.37	0.78	0.39	0.68	0.70	0.66	0.67	0.32	0.62	0.92	1.00		
wills7	0.34	0.32	0.60	0.34	0.52	0.57	0.54	0.56	0.39	0.52	0.75	0.82	1.00	
wills10	0.34	0.42	0.65	0.31	0.57	0.65	0.62	0.63	0.45	0.46	0.83	0.86	0.86	1.00
RPC	0.00	-0.12	0.02	-0.10	0.13	0.10	0.11	0.12	0.14	-0.06	0.05	0.02	-0.12	0.15