H N P D I S C U S S I O N P A P E R

The Impact of the Degree of Risk-Sharing in Health Financing on Health System Attainment

Guy Carrin, Riadh Zeramdini, Philip Musgrove, Jean-Pierre Poullier, Nicole Valentine and Ke Xu

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The Impact of the Degree of Risk sharing in Health Financing on Health System Attainment

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Abstract: A simple econometric analysis is undertaken concerning the impact of the degree of risk sharing in countries' health financing organization on the goals of the health system, as defined in the *World Health Report 2000*, i.e., the level of health and its distribution across the population, the level of responsiveness and its distribution across the population, and fair financing. The degree of risk sharing varies according to whether countries have a universal coverage system, financed via social health insurance or general taxation, or systems with less well-developed coverage including variants of social health insurance and/or general taxation benefiting specific population groups. We undertook a classification of countries according to the degree of risk sharing, based primarily on the health care financing legislation of the World Health Organization's 191 member states and on its data base of Health System Profiles. The results obtained give empirical support to the hypothesis that the degree of risk sharing in health financing organizations impacts positively on health system attainment, as measured by the five goals indicators. The effects found prove to be quite robust, after introducing the GINI index among the set of explanatory variables in the models for the distributional measures.

Keywords: risk sharing, health system goals, health financing system

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PREFACE

In January 2000, Dr. Gro Harlem Bruntland, Director General of the World Health Organization (WHO), established a Commission on Macroeconomics and Health (CMH) to provide evidence on the importance of health to economic development and poverty alleviation.

This HNP Discussion Paper is based on a report on community financing submitted in September 2001 to Working Group 3 of the CMH. The mandate of Working Group 3 was to examine alternative approaches to domestic resources mobilization, risk protection against the cost of illness, and resource allocation. The working group was chaired by Professor Alan Tait (Former Deputy Director of Fiscal Affairs, International Monetary Fund, and currently Honorary Fellow at University of Kent at Canterbury and Honorary Fellow at Trinity College, Dublin) and Professor Kwesi Botchewey (Director of Africa Research and Programs at the Harvard Center for International Development).

Professor Jeffery D. Sachs (Chairman of the Commission and Director of the Harvard Center for International Development) presented the findings of the CMH in a report submitted to WHO on December 20, 2001—*Macroeconomics and Health: Investing in Health for Economic Development*.

The CMH report recommended a six-pronged approach to domestic resource mobilization at low income levels: "*(a) increased mobilization of general tax revenues for health, on the order of 1 percent of GNP by 2007 and 2 percent of GNP by 2015; (b) increased donor support to finance the provision of public goods and to ensure access for the poor to essential health services; (c) conversion of current out-of-pocket expenditure into prepayment schemes, including community financing programs supported by public funding, where feasible; (d) a deepening of the HIPC (Highly Indebted Poor Countries) initiative, in country coverage and in the extent of debt relief (with support form the bilateral donor community); (e) effort to address existing inefficiencies in the way in which government resources are presently allocated and used in the health sector; and (f) reallocating public outlays more generally from unproductive expenditure and subsidies to social-sector programs focused on the poor*."

Most community financing schemes have evolved in the context of severe economic constraints, political instability, and lack of good governance. Usually government taxation capacity is weak, formal mechanisms of social protection for vulnerable populations absent, and government oversight of the informal health sector lacking. In this context of extreme public sector failure, community involvement in the financing of health care provides a critical, though insufficient, first step in the long march toward improved access to health care by the poor and social protection against the cost of illness.

The CMH stressed that community financing schemes are no panacea for the problems that low-income countries face in resource mobilization. They should be regarded as a complement to—not as a substitute for—strong government involvement in health care financing and risk management related to the cost of illness.

Based on an extensive survey of the literature, the main strengths of community financing schemes are the degree of outreach penetration achieved through community participation, their contribution to financial protection against illness and increase in access to health care by low-income rural and informal sector workers. Their main weaknesses are the low level of revenues that can be mobilized from poor

communities, the frequent exclusion of the poorest from participation in such schemes without some form of subsidy, the small size of the risk pool, the limited management capacity that exists in rural and low-income contexts, and their isolation from the more comprehensive benefits often available through more formal health financing mechanisms and provider networks.

The work by the CMH proposed concrete public policy measures that governments can introduce to strengthen and improve the effectiveness of community involvement in health care financing. This includes: (a) increased and well targeted subsidies to pay for the premiums of low-income populations; (b) use of insurance to protect against expenditure fluctuations and use of reinsurance to enlarge the effective size of small risk pools; (c) use of effective prevention and case-management techniques to limit expenditure fluctuations; (d) technical support to strengthen the management capacity of local schemes; and (e) establishment and strengthening of links with the formal financing and provider networks.

The report presented in this *HNP Discussion Paper* has made a valuable contribution to our understanding of some of the strengths, weaknesses, and policy options for securing better access for the poor to health care and financial protection against the impoverishing effects of illness, especially for rural and informal sector workers in low-income countries.

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ACRONYMS

CO	Sub-index of responsiveness
DALE	Disability adjusted life expectancy
DARS	Dummy variable = 1 when the country has an advanced risk-sharing system; otherwise 0
DMRS	Dummy variable = 1 when the country has a medium risk-sharing system; otherwise 0
DMRS1	Dummy variable = 1 when the country has health insurance schemes whereby only employees are covered; otherwise 0
DMRS2	Dummy variable = 1 when the country has health insurance schemes that cover specific groups only; otherwise 0
DSHI	Dummy variable = 1 when the country has a social health insurance scheme; otherwise 0
EDU	Enrolment in primary education of the relevant age group
GINI	Gini index of income inequality
GDP	Gross Domestic Product
GT	General taxation
HEC	Health expenditure per capita (in U.S. dollars)
IECS	Index of equality of child survival"
IFFC	Index of fairness of financial contribution
IR	Index of level of responsiveness
IRD	Index of distribution of responsiveness
PHE%	Share of public health expenditure in total health expenditure
RESPECT	Sub-index of responsiveness "Respect for persons"
SHI	Social health insurance
WHR	World Health Report

I. INTRODUCTION

There are important linkages between what health systems can achieve in terms of pre-set goals and the functions that they undertake. The *World Health Report* (WHR) 2000 has designed a coherent framework for analyzing these linkages.[1] In this paper, we specifically address the health financing function of pooling of resources and how it influences health systems attainment. One essential question is whether health financing organizations provide sufficient financial risk protection for the population. People's access to health services depends on this protection. Health financing organizations that do not include the low-income population groups, for instance, will lead to many individuals' being unable to pay for care. The extent to which these population groups are effectively included in risk-sharing arrangements is therefore likely to affect a goal such as the equality of health status. Health financing organizations may also be more or less engaged in purchasing an adequate package of health services for the entire population. In this sense, they may affect the average level of access to good care and therefore indirectly have an impact upon the average level of health. Apart from the level and distribution of health status, other goals may be considered. In the next section, we give an overview of the goals of health systems as proposed by the *WHR 2000,* and discuss how they relate to the functions of these systems.

The main purpose of this paper is to undertake a simple econometric analysis of the impact of the degree of risk sharing in countries' health financing organization on the goals of the health system. The degree of risk sharing will vary according to whether countries have a universal coverage system, financed via social health insurance or general taxation, or systems with less well-developed coverage, including variants of social health insurance and/or general taxation benefiting specific population groups. Risk sharing via community health financing schemes could not be considered for lack of data at the national level.

In preparation of the econometric analysis, we turn to the specific linkage between the goals and the health financing function in section 3. Then in section 4 we classify the health financing organization of 191 countries by the degree of risk sharing. This classification will help in defining the variables that measure risk sharing, and which will be used in the econometric analysis. We examine the available data on public health expenditure and health expenditure by nongovernmental organizations and communities. The specification of the econometric models and estimation results are presented in sections 5 and 6, respectively. We conclude in section 7.

II. HEALTH SYSTEM GOALS AND FUNCTIONS IN A NUTSHELL

The framework, as presented in the *WHR 2000,* defines a set of goals or objectives and includes ways to measure the achievement toward these goals. Of course, to obtain these achievements, health systems do need to carry out a number of functions. Below, we address both goals and functions.

The goals considered are good health, responsiveness, and fair financing. *Good health* is approached in two ways. One is by striving for the best attainable average level for the entire population. The other is by minimizing the differences in health status among individuals and groups. Health is measured via disability-

[1] *WHO* (2000). See also Murray and Frenk (2000).

adjusted life expectancy,[2] whereby account is taken of time lived with a disability. Second, *responsiveness* measures how the health system performs relative to non-health aspects of provided health services. Responsiveness captures the extent to which the health system is client-oriented and treats people with respect. Respect for people includes the following aspects: respect for the dignity of the person, confidentiality, and autonomy. Within client orientation, we consider prompt attention, the quality of the amenities, the access to social support networks, and the choice of provider. Note that the distinction between overall *level* and *distribution* across the population also applies to responsiveness. Third, *fair financing* requires that health expenditure of households be distributed according to ability to pay rather than to individual risk of illness. In a fairly financed system, everyone should be financially protected. It is crucial therefore that health systems rely as fully as possible on prepaid contributions that are unrelated to individual illness or utilization. It is clear that when analyzing fair financing, we are concerned with distributive aspects only. We thus obtain five objectives: the level and distribution of health, the level and distribution of responsiveness, and fair financing. Measurements have been designed so as to quantify the achievement with respect to each of these objectives.[3]

We further consider four main functions of the health system: the delivery of health services; the creation of resources for health (investment in people, buildings and equipment); health financing (raising, pooling, and allocating the revenues to purchase health services); and stewardship. The latter refers to a government's responsibility for the general health of its population. The stewardship function is of special importance, as it will have an impact on the way the other three functions are carried out.

Work is currently underway at WHO to define indicators for the various functions, so that their possible impact on goal achievement can be measured. This paper can be seen as an element of this particular work, in that it focuses on the nature of risk sharing in the world's different health financing systems and its possible impact on the goals as defined above.

III. THE ORGANIZATIONAL FORM OF HEALTH FINANCING AND ITS LINK TO GOAL ACHIEVEMENT

A crucial concept in health financing is that of pooling. *Pooling* is defined as the "accumulation and management of revenues in such a way as to ensure that the risk of having to pay for health care is borne by all members of the pool and not by each contributor individually."[4] The larger the degree of pooling, the less people will have to bear the financial consequences of their own health risks.

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[2] This summary measure of population health adjusts life expectancy at birth for the burden of disability. Disability weights are used to convert years lived in disability into equivalent years lived in good health. See further Mathers et al. (2000).

[3] See WHO (2000) for a summary of the methods. For further details, we refer to http://www-nt.who.int/whosis/statistics/discussion_papers/discussion_papers.cfm?path=statistics,discussion_papers

[4] WHO (2000, p.96).

Health financing systems encompass various degrees of risk sharing. There are two major ways to ensure financial risk protection for a nation's entire population. One is a system whereby *general taxation* (GT) is the main source of financing health services. Services are usually provided by a network of public and contracted private providers, often referred as a national health service. The second is *social health insurance* (SHI), whereby workers, enterprises, and government pay financial contributions. The base for workers' and enterprises' contributions is usually the worker's salary. Social health insurance either owns its own provider networks, works with accredited private providers, or combines both approaches. In principle, both systems pool all of the population's risks, with contributions that are delinked from individual risks. This approach theoretically avoids exposing individuals to no or insufficient access to the health care they need. These systems are often denoted as *universal coverage* systems, but financial protection may still be judged inadequate in a number of these systems.

There are also systems with no explicit reference to overall coverage of the population. These include *mixed health financing systems*, with some part of the population partially covered via general taxation, and another part covered by health insurance schemes. The latter may address specific groups only. Still, they may practice full pooling among their members and define health insurance contributions according to capacity to pay, rather than according to individual health risks. In other words, these schemes may apply community rating such as in a social health insurance scheme, but for specific groups only. Such schemes may include voluntary private insurance arrangements, mutual health funds, enterprise-based and community health insurance. Finally, some countries do finance health services via *general taxation* but offer only *incomplete coverage*.

For the purpose of this paper, we will say that countries that aim at universal coverage and use either general taxation or social health insurance enjoy systems with *advanced risk sharing*. Such schemes allow for a more equal access among individuals to health services. In addition, such schemes generally better define an adequate package of health services to which citizens are entitled. Countries with mixed health financing systems will be associated with *medium risk sharing*. The countries with general taxation systems that incompletely cover the population are then associated with *low risk sharing*. In this paper we will investigate whether larger degrees of risk sharing have a beneficial impact on the five indicators of goal achievement.

D. ORGANIZATION OF HEALTH FINANCING IN THE WORLD

In Table 1 of Appendix A, countries are classified according to the criterion of risk sharing as defined above, based on health care financing legislation of the 191 member states of the World Health Organization (WHO). Our main source for this revision was the publication Social Security Programs throughout the World provided by the U.S. Social Security Administration (1999). However, for 52 countries, no or insufficient information was given. For the latter group, and in order to identify the category of health financing system, WHO's data base of Health System Profiles[5] and other selected publications were used.[6]

[5] These can be found on www.who.int/country_profiles/main.cfm/

[6] These include Nolan and Turbat (1995) and the website of the Center for International Health Information www.cihi.com

In Table 1 approximately 40 percent of the countries are characterized as advanced risk-sharing systems they have either a general taxation system (50 countries) or a social health insurance scheme (30 countries), covering nearly the entire population. The 61 countries with medium risk sharing are further classified into three main variants. In the first variant, health insurance covers all employees and self-employed, though subject to a number of exclusions.[7] The second variant covers only employees and the third covers specific groups only, for instance through mutual health funds and enterprise-based health insurance for particular categories of workers. In these three variants, there are 9, 20, and 32 countries, respectively. Finally, 50 countries are classified among those with low risk sharing. These countries are generally characterized by under-financed health systems as compared to the health needs of the population. The names of a number of countries are printed in boldface italics. For those countries, the proposed classification is uncertain, due to incomplete or absent information on the size and structure of the eligible population that is effectively covered by the health financing system.

The overall classification allows us now to define the two main organizational dummy variables: DARS = 1 when a country belongs to the set of advanced risk-sharing systems and 0 otherwise; DMRS = 1 when a country belongs to the set of medium risk-sharing systems and 0 otherwise.

In Table 2 of Appendix A, we rank countries according to the category of risk sharing and the percentage share of public[8] health expenditure in total health expenditure. The three categories considered are a share between 75 and 100 percent, between 50 and 75 percent, and below 50 percent. We use the latter ratio as a simple quantitative indicator of the system's degree of financial risk protection. In fact, of the countries with advanced risk sharing, 74 out of 80 have a ratio above 50 percent; 41 have a ratio above 75 percent. Of the countries with medium risk sharing, only 3 out of 61 have a ratio above 75 percent. For countries with low risk sharing, a tilt toward low ratios would be expected. However, for 9 out of 50 countries with low risk sharing, ratios above 75 percent are reported, which is surprising. However, it is recognized in the *WHR 2000* that quite a number of countries have incomplete data and mixed degrees of reliability,[9] which may partly explain this finding.

It is also interesting to rank countries according to the category of risk sharing and to the income level, as measured by 1998 gross domestic product per capita (in U.S. dollars). According to Table 3, Appendix A, of the 80 countries with advanced risk sharing, 20 belong to the category of upper middle-income countries, and 34 to the high-income category. Most countries with low to medium risk sharing belong to the low-income and lower middle income categories. In this set of countries, only Andorra and the United States belong to the upper middle-income or high-income category.

[7] For instance, the agricultural self-employed population may not be covered. Or workers in small enterprises with fewer than 10 workers may not be insured.

[8] Note that social insurance expenditure is included in public health expenditure.

[9] For these nine countries, the data are either incomplete with low reliability (two countries out of nine) or are incomplete with high to medium reliability.

V. MODELING THE IMPACT OF THE ORGANIZATIONAL FORM OF HEALTH FINANCING ON HEALTH ATTAINMENT

A. DESCRIPTIVE DATA ANALYSIS

As a prelude to the econometric analysis, descriptive statistics for the five health attainment indices are computed. The health attainment indices are the disability-adjusted life expectancy (DALE), the index of level of responsiveness (IR), the index of fairness of financial contribution (IFFC), the index of distribution of responsiveness (IRD) and the index of equality of child survival (IECS). All data used originate from the Statistical Appendix of *WHR 2000*. In Table 1a, statistics are presented related to all countries that have observations on the indices. In Table 1b, however, countries whose risk-sharing classification is uncertain are removed from the samples. Appendix B presents the histograms associated with the five indicators for the full and restricted samples.[10]

The indices are classified according to the category of risk sharing of countries' health financing organizations. We present the mean, coefficient of variation, minimum and maximum. A first general tendency is that the means of the indicators are larger, the greater the degree of risk sharing. One exception is in Table 1a where the mean fair financing index for countries with advanced and medium risk sharing is smaller than that of the countries with low risk sharing. However, in Table 1b, the mean IFFC for countries with advanced risk sharing exceeds that for countries with low risk sharing. Second, using the restricted samples (Table 1b), the coefficients of variation (CV) indicate that, except in the case of IR, there is a lower relative dispersion around the mean in countries with advanced risk sharing than in countries with medium risk sharing. The latter is consistent with the fact that we have defined 3 sub-groups with different degrees of risk sharing *within* the set of countries with medium risk sharing. Notice also that in three cases (fair financing, distribution of responsiveness and distribution of health), countries in the low risk sharing category show lower coefficients of variation than those for the countries with medium risk sharing. It stands to reason that the low risk sharing category of countries is likely to be more homogeneous than the group of countries with medium risk sharing. Except for the value related to IR, the coefficients of variation are higher, however, when compared with the CV of countries with advanced risk sharing.

[10] The samples for IR and IRD do not contain countries whose risk-classification is uncertain. In other words, for those variables, only the full samples are considered.

Table 1a: Descriptive Statistics (full samples)

Statistics	**Disability adjusted life-expectancy (DALE)**	***Index of Level of Responsiveness* (IR)**	***Index of fairness of financial contribution* (IFFC)**	***Index of distribution of responsiveness* (IRD)**	***Index of equality of child survival* (IECS)**
Total sample					
Mean	56.8262	0.5165	0.8730	0.8967	0.6659
CV[1]	0.21650	0.1542	0.1203	0.0969	0.2878
Min	25.9000	0.3740	0.6230	0.7230	0.2450
Max	74.5000	0.6880	0.9920	0.9999	0.9990
Number of observations	191	30	21	33	58
Countries with advanced risk sharing (DARS = 1)					
Mean	66.0725	0.5849	0.8732	0.9772	0.9296
CV	0.07550	0.1272	0.0643	0.0252	0.1490
Min	52.3000	0.4430	0.8020	0.9180	0.6320
Max	74.5000	0.6880	0.9390	0.9999	0.9990
Number of observations	80	8	5	9	7
Of which countries with Social Health Insurance (DSHI = 1)					
Mean	68.5267	0.5452	0.8945	0.9715	0.9990
CV	0.05520	0.1150	0.0704	0.0290	0
Min	62.2000	0.4430	0.8500	0.9180	0.9990
Max	74.5000	0.6120	0.9390	0.9960	0.9990
Number of observations	30	5	2	6	4
Of which countries with General Taxation (DSHI = 0)					
Mean	64.6000	0.6510	0.8590	0.9886	0.8370
CV	0.07850	0.0492	0.0694	0.0128	0.2237
Min	52.3000	0.6320	0.8020	0.9750	0.6320
Max	73.0000	0.6880	0.9210	0.9999	0.9990
Number of observations	50	3	3	3	3
Countries with medium risk sharing (DMRS = 1)	52.9033	0.5153	0.8623	0.8846	0.6792
Mean	0.21520	0.1109	0.1463	0.0932	0.2320
CV	29.1000	0.4180	0.6230	0.7230	0.2610
Min	72.3000	0.6230	0.9920	0.9860	0.9660
Max	61	16	11	17	34
Number of observations					
Countries with low risk sharing (DARS = 0 and DMRS = 0)					

[1]: CV is the coefficient of variation

Mean	46.8180	0.4285	0.8962	0.8227	0.5309
CV	0.24110	0.1165	0.1183	0.0847	0.2816
Min	25.9000	0.3740	0.7140	0.7280	0.2450
Max	66.7000	0.4940	0.9610	0.9490	0.7850
Number of observations	50	6	5	7	17

Table 1b: Descriptive Statistics (restricted samples)

Statistics	**Disability Adjusted life-expectancy (DALE)**	***Index of Level of* Responsiveness (IR)**	***Index of fairness of* financial contribution (IFFC)**	***Index of distribution* of responsiveness (IRD)**	***Index of equality* of child survival (IECS)**
Total sample					
Mean	58.0588	0.5165	0.8721	0.8967	0.6843
CV[1]	0.20840	0.1542	0.1233	0.0969	0.2636
Min	25.9000	0.3740	0.6230	0.7230	0.2610
Max	74.5000	0.6880	0.9920	0.9999	0.9990
Number of observations	160	30	19	33	52
Countries with advanced risk sharing (DARS = 1)					
Mean	67.1179	0.5849	0.8910	0.9772	0.9378
CV	0.06450	0.1272	0.0513	0.0252	0.1598
Min	56.3000	0.4430	0.8500	0.9180	0.6320
Max	74.5000	0.6880	0.9390	0.9999	0.9990
Number of observations	67	8	4	9	6
Of which countries with Social Health Insurance (DSHI = 1)					
Mean	68.5267	0.5452	0.8945	0.9715	0.9990
CV	0.06460	0.1150	0.0703	0.0290	0
Min	62.2000	0.4430	0.8500	0.9180	0.9990
Max	74.5000	0.6120	0.9390	0.9960	0.9990
Number of observations	30	5	2	6	4
Of which countries with General Taxation (DSHI = 0)					
Mean	65.9757	0.6510	0.8875	0.9886	0.8155
CV	0.06740	0.0492	0.0534	0.0128	0.3183
Min	56.3000	0.6320	0.8540	0.9750	0.6320
Max	73.0000	0.6880	0.9210	0.9990	0.9990
Number of observations	37	3	2	3	2
Countries with medium risk sharing (DMRS = 1)	53.7596	0.5153	0.8623	0.8846	0.6849

[1] CV is the coefficient of variation

1)	0.20810	0.1109	0.1464	0.0932	0.2282
Mean	29.1000	0.4180	0.6230	0.7230	0.2610
CV	72.3000	0.6230	0.9920	0.9860	0.9660
Min	57	16	11	17	33
Max					
Number of observations					
Countries with low risk sharing (DARS = 0 and DMRS = 0)					
Mean	48.0056	0.4285	0.8800	0.8227	0.5655
CV	0.24520	0.1165	0.1307	0.0847	0.2258
Min	25.9000	0.3740	0.7140	0.7280	0.3360
Max	66.7000	0.4940	0.9590	0.9490	0.7850
Number of observations	36	6	4	7	13

B. SPECIFICATION OF THE BASIC MODEL

Impact on the level of health and on responsiveness

(i) The *level of health* is measured by the Disability Adjusted Life Expectancy[11] (DALE). We propose the following basic specification:

$$\text{Ln (80—DALE)} = a_1 + b_1 \text{ Ln HEC} + c_1 \text{ Ln EDU} + d_1 \text{ DARS} \quad (1),$$

where HEC refers to health expenditure per capita (in US$). EDU refers to the educational attainment in society, and is measured by enrolment in primary education of the relevant age group. The dependent variable is the logarithm of the difference between the observed DALE and a maximum of 80. With this specification, we say that these differences depend first upon overall resources for health. However, health status is not dependent only upon the activities in the health system. The variable EDU is therefore included among the determinants in equation (1) and is meant to capture the impact of overall social development on health. Both HEC and EDU are expected to raise DALE and so to be negatively related to the distance of DALE from the maximum. The last explanatory variable, DARS, is also expected to have a negative impact on the distance between the maximum of 80 and the observed DALE. We reason that generally health financing schemes with advanced risk sharing better define an adequate benefit package of health services to which citizens are entitled. The latter should increase the overall level of health in society. We submit that a better definition of the benefit package is the result of a greater stewardship role exercised by governments in view of the national importance of the health financing schemes.

Alternative models are also tested. One tests whether social health insurance has a specific impact on the health level. A dummy variable DSHI, equals 1 when the country has a social health insurance scheme and 0 otherwise, will be added to the explanatory variables of equation (1). If we reason that, on average, general taxation and social health insurance schemes cover similar population groups with similar health

[11] This summary measure of population health adjusts life expectancy at birth for the burden of disability. Disability weights are used to convert years lived in disability into equivalent years lived in good health. See further Mathers et al. (2000).

interventions,[12] social health insurance should not do better or worse than general taxation; hence, we expect an effect that is not statistically different from zero.

The second alternative model studies the marginal impact of a mixed health financing scheme. A dummy variable DMRS, equal to 1 when the country has a mixed health financing system and 0 otherwise, is included next to DARS. Our hypothesis is that the marginal impact of DMRS on Ln(80-DALE) is negative. Mixed health financing schemes also include health insurance schemes applying risk sharing and therefore should have a beneficial impact on health level attainment.

In a third alternative model, we test whether certain groups of schemes within the overall set of mixed health financing systems would have an additional net effect on the level of health. We select the group of mixed systems that encompass health insurance schemes whereby only employees are covered (DMRS1 = 1 and 0 otherwise) and health insurance schemes that cover other specific groups only (DMRS2 = 1 and 0 otherwise). As these health insurance schemes offer a lower degree of financial risk protection, as compared with schemes that cover all employees and self-employed, the expected sign of the impact of DMRS1 and DMRS2 is positive.

Fourth, we add both DSHI and DMRS to the explanatory variables of equation (1). Finally, we bring DSHI, DMRS, DMRS1 and DMRS2 together into the equation.

(ii) The *level of responsiveness* is measured by an index (IR) that varies between 0 and 1, with 1 being the maximum. Two alternative functional forms are adopted:

$$\text{Ln}\,[IR/(1- IR] = a_{21} + b_{21}\,HEC + c_{21}\,EDU + d_{21}\,DARS \qquad (2a)$$

and

$$\text{Ln}\,(1—IR) = a_{22} + b_{22}\,\text{Ln}\,HEC + c_{22}\,\text{Ln}\,EDU + d_{22}\,DARS \qquad (2b).$$

Equation 2a has a logistic specification and ensures that the predicted values for IR stay within the 0–1 interval.

In equation 2a, the impact of HEC is presumed to be positive, as more resources are likely to facilitate the responsiveness of health systems. In particular, the "client orientation" elements of responsiveness such as the quality of amenities and choice of provider can be expected to be especially resource-dependent. In the present case, EDU can be understood as capturing the positive effect of a literate and more developed society on the "respect for persons"; the autonomy of persons is especially likely to improve with a better education status. We hypothesize that advanced risk-sharing systems are associated with a larger degree of stewardship. The latter is likely to positively influence the mechanisms and incentives that entail a greater responsiveness. The coefficient of DARS is therefore expected to be positive.

In equation 2b, the dependent variable is measured as the logarithm of the distance of IR from the maximum. In this specification, all coefficients but the intercept are expected to be negative.

[12] See also Musgrove (1996, p.51) for a discussion of this issue.

As in the case of the health level, alternative models can be estimated. Using either type of functional forms, DSHI is expected to be neutral vis-à-vis responsiveness; we therefore expect a coefficient that is not statistically different from zero. In the logit form of the equation, DMRS is expected to exert a positive effect, whereas a negative impact is expected to be associated with DMRS1 and DMRS2. When using the second functional form for the dependent variable, the signs of the coefficients associated with DMRS, DMRS1 and DMRS2 are expected to be opposite that of the coefficients in the logit specification.

Impact on the distributional measures of the goals

The three measures considered are the index of fairness of financial contribution[13] (IFFC), the index of distribution of responsiveness[14] (IRD) and the index of equality of child survival (IECS).[15] All indices vary between 0 and 1, with 1 corresponding to complete equality. The functional forms adopted for these dependent variables ensure that the predicted indices stay within the 0-1 interval.

We first formulate models focusing on the effects of the degree of risk-sharing only. In the simplest equation we estimate the impact of the dummy variable (DARS). We have adopted the same functional forms as in equations 2a and 2b:

$$\text{Ln}\,[I_j/(1- I_j)] = a_{31} + b_{31}\,\text{DARS} \qquad (3a)$$

and

$$\text{Ln}\,(1—I_j) = a_{32} + b_{32}\,\text{DARS} \qquad (3b).$$

where I_j (j = 1,…,3) refers to the three above-mentioned indices, respectively.

The effect of DARS on the indicator of *fair financing* is expected to be positive when using the logit form of the equation. In countries with advanced risk sharing, more so than in other systems, people pay financial contributions according to their capacity to pay. This then should be associated with a higher IFFC. Second, universal coverage systems are presumed to pay more attention to the objective of equal treatment for equal need. It is therefore assumed that such systems also respond to people's expectations as to the non-medical aspects of health care in a more equal way. Hence, the effect of DARS on the

[13] This index measures how the health financing contribution (HFC) is distributed across households. HFC is composed of contributions that are implicitly paid via taxes (e.g., income taxes, value-added tax) for health, of explicit social health insurance contributions, premiums for private health insurance and of out-of-pocket payments. The IFFC is constructed in such a way that households that spend a very large share of income above subsistence are weighted more heavily. See further Murray et al. (2000).

[14] The responsiveness inequality index is based on an assessment of the disadvantage with respect to responsiveness as experienced by different groups including poor people, women, old people and indigenous groups or minorities. The index accounts for the relative importance of these groups into total population. See further Valentine et al. (2000).

[15] This index is based on data of expected survival time under age 5, themselves derived from child mortality distributions. In this index, the survival of each child under 5 is compared with that of all others. This index is used in the *WHR 2000* as a measure of the distribution of health, pending more information on health inequality in the population at large. See further Gakidou and Murray (2000).

distribution of *responsiveness* is anticipated to be positive as well. Third, we postulate also that universal coverage systems are more apt than other systems to provide people with a similar benefit package, irrespective of their socioeconomic background. The variable DARS is therefore expected to exert a positive effect on the *equality of child survival.*

When considering the second functional form, it stands to reason that the coefficients of DARS are expected to have the opposite sign.

For alternative models, we first include DSHI as an additional dummy variable in equations 3a and 3b. The sign of the coefficients of DSHI is uncertain, however. Whether social health insurance is inferior or superior to general taxation in terms of fair financing, depends on a host of factors. The latter include the way health insurance contributions are levied (with an earnings ceiling or not), the progressivity of income taxes, the level of copayments and/or user fees, and the types of health services that are excluded from coverage and their prices.

In general, when adding DMRS to the explanatory variables, we expect its effect to be positive and negative in the two functional forms, respectively. The effects of DMRS1 and

DMRS2 are anticipated to be negative and positive in the case of the two functional forms, respectively.

C. SPECIFICATION OF ENLARGED MODELS

The GINI index of income inequality in the equations for the distributional measures

In one enlarged model, the GINI index measuring the distribution of income is included among the explanatory variables:

$$\text{Ln}\,[I_j/(1- I_j)] = a_{41} + b_{41}\,\text{GINI} + c_{41}\,\text{DARS} \qquad (4a)$$

and

$$\text{Ln}\,(1—I_j) = a_{42} + b_{42}\,\text{GINI} + c_{42}\,\text{DARS} \qquad (4b).$$

where I_j (j = 1,…,3) refers again to the three indices, respectively.

Income inequality in society, as measured by the GINI, is expected to be mirrored, at least partially, in the distribution of the health financing burden on the various households. For instance, in equation 4a, it is expected that the larger the income inequality, the lower is the degree of fair financing. The coefficient b_{41} is therefore expected to be negative. In the case of equation 4b, a positive coefficient is predicted. We further anticipate that countries with advanced risk sharing are apt to counteract the initial effect of overall income inequality by introducing better financial risk protection for all of the population. Hence, we expect that the impact of DARS is maintained.

Further variants of the basic equations 4a and 4b are investigated, via the inclusion of DSHI, DMRS, DMRS1 and DMRS2. In principle, there should be no change in the supposed direction of the effects

already commented upon earlier. In addition, the impact of interaction variables, combining the GINI index with the organizational dummy variables, can be studied. The coefficients of the interaction variables are expected to show that the larger the degree of risk sharing, the more the impact of the GINI index is offset. For instance, the coefficient of the interaction term between GINI and DARS is anticipated to be positive and negative, respectively.

The impact of the ratio of public health expenditure to total health expenditure on the health system attainment indicators

The various models considered so far measure the *average* impact of the different risk-sharing schemes on the attainment indicators. Enlarged models with the inclusion of interaction variables between the ratio of public health expenditure to total health expenditure (PHE%) and the organizational dummy variables among the determinants can also be considered. We expect that a higher PHE% would reinforce the effect of the organizational variables in the earlier models. The more health expenditure is managed through the public sector, and thus the higher the degree of risk pooling, the larger the equality of people within the health system is presumed to be.

The basic equations are the following:

$$\text{Ln}\,(80\text{—DALE}) = a_{51} + b_{51}\,\text{Ln HEC} + c_{51}\,\text{Ln EDU} + d_{51}\,\text{DARS} + e_{51}\,\text{DARS*PHE\%} \qquad (5a)$$

$$\text{Ln}\,[\text{IR}/(1\text{- IR}] = a_{52} + b_{52}\text{HEC} + c_{52}\,\text{EDU} + d_{52}\,\text{DARS} + e_{52}\,\text{DARS*PHE\%} \qquad (5b)$$

and

$$\text{Ln}\,(1\text{—IR}) = a_{53} + b_{53}\,\text{Ln HEC} + c_{53}\,\text{Ln EDU} + d_{53}\,\text{DARS} + e_{53}\,\text{DARS*PHE\%} \qquad (5c).$$

$$\text{Ln}\,[I_j/(1\text{- }I_j)] = a_{54} + b_{54}\,\text{DARS} + c_{54}\,\text{DARS*PHE\%} \qquad (5d)$$

and

$$\text{Ln}\,(1\text{—}I_j) = a_{55} + b_{55}\,\text{DARS} + c_{55}\,\text{DARS*PHE\%} \qquad (5e).$$

where I_j (j = 1,…,3) refers to the three equality indices, respectively.

The coefficients e_{51} and e_{53} are expected to be negative. The coefficient e_{52} is anticipated to have a positive sign. The coefficients c_{54} and c_{55} are expected to be positive and negative, respectively. Note that in alternative equations, we also investigate the interaction of PHE% with DSHI, DMRS, DMRS1 and DMRS2.

D. RESULTS

Estimation results for the basic model

The equations have been estimated with the ordinary least squares method, using data for the explanatory variables HEC, EDU and PHE% that pertain to the year 1997. The GINI index pertains to specific years, depending upon the country, within the period 1986-1999. The data and their sources are presented in Appendix I. Different sample sizes were used: the *full* samples (using all available observations), *restricted* samples (deleting observations of countries with uncertain risk-sharing classification), and *more restricted* samples (previously defined restricted samples but with additional deletion of influential data[16]). The results of the regressions run with the different sample sizes are presented in Appendixes C, D, and E, respectively.

The results concerning the **level of health (DALE)** with the *full sample* are presented in Table 1 of Appendix C. In all models, the effects of DARS, HEC and EDU are as expected and are statistically significant at the 1 percent significance level. The other organizational dummy variables do not show a significant impact. Using the adjusted R^2 , regression 2 is the best. However, using the Akaike criterion,[17] regression 1 is preferred. When using the *restricted sample* (Table 1 of Appendix D), we obtain similar results with DARS, HEC and EDU showing statistically significant coefficients. Regression 1 is the best according to the Akaike criterion.

From the estimates related to the **level of responsiveness (IR)**, in Tables 2a and 2b of Appendix C, we see that HEC and EDU do not have a statistically significant impact. One major reason is likely to be that the index of responsiveness contains both elements of respect for persons and client orientation, and that these are influenced differently by HEC and EDU. For instance, HEC may be important in explaining client orientation, whereas it may not be when explaining respect for persons. Therefore, when analyzing the determinants of the overall index of responsiveness, the effect of HEC may disappear. The results also show mixed results for the statistical significance of the coefficient of DARS. The adjusted R^2 and the Akaike criterion point each time at regression 5 as the best one. This regression includes DARS, DSHI and DMRS as explanatory variables. Both the coefficients of DARS and DMRS have the expected sign in both sets of equations.

In regression 5 of Table 2a, the coefficient of DSHI is not statistically significant, as expected. Still, this particular coefficient becomes significant when using the other functional form for the dependent variable. The number of countries with universal coverage in the sample is small (8), and values of IR for specific countries may well heavily influence the regression results. For example, the deletion of data for Bulgaria, which has SHI and is characterized by a relatively low level of IR, renders the coefficient of DSHI statistically insignificant at the 10 percent level in both functional forms. We refer to the regression results presented in Tables 1a and 1b in Appendix E. Using this particular restricted sample, and the logit specification, regression 5 is preferred according to the adjusted R^2 and Akaike criteria. In those regressions, the coefficients of DARS and DMRS are significant at the 1 percent and 5 percent level, respectively. In the case of the second functional form, regression 5 is preferred according to both the

[16] Mukherjee, White and Wuyts (1998, p.138) refer to influential data as points that pull the regression line in their direction. Influential data are not necessarily associated, however, with outliers (large residuals).

[17] See for instance Greene (2000, p.306).

adjusted R^2 and Akaike criterion. In this regression, the coefficients of DARS and DMRS are also significant at the 1 percent and 5 percent level, respectively.

An additional regression analysis was undertaken with the subresponsiveness indices "respect for persons" (RESPECT) and "client orientation" (CO) as dependent variables. We present only the best equations (according to the Akaike criterion) in Table 1 of Appendix H. There are no statistically significant effects of HEC and EDU in the equations for "respect for persons". However, in the logit regression for "client orientation", HEC becomes statistically significant. The coefficients of DARS and DRMS are statistically different from zero, except for the coefficient of DMRS in regression 2 for client orientation. In regression 2 for RESPECT and CO, the coefficient of DSHI proves to be statistically significant. However, the latter result is no longer maintained after deleting data for Bulgaria from the sample; see Table 2 of Appendix H where the best results are presented. In addition, the impact of HEC now becomes statistically insignificant in all four regressions.

The *full sample* results related to the **index of fair financing (IFFC)** are presented in Tables 3a and 3b of Appendix C. The explanatory power of the regressions is minimal: none of the explanatory variables has a statistically significant impact on the IFFC. The same results are obtained when using the restricted samples (Tables 2a and 2b of Appendix D). We submit that the major reason for these unsatisfactory results is the relatively small sample size. Moreover, the sample did not include sufficient data on countries with advanced and with low-risk sharing. For instance, the (full sample) data on advanced risk sharing are those of Bulgaria, Jamaica, Kyrgyzstan, Romania and Russia, and do inadequately reflect the experience of high-income countries with either social health insurance or general taxation financing.

Estimates for the **distribution of responsiveness (IRD)** with the *full sample* are presented in Tables 4a and 4b of Appendix C. In both sets of equations the coefficients of DARS and DSHI are statistically significant. The impact of DSHI is against our expectations. The number of countries with universal coverage in the sample is quite small (9), and values of IRD for specific countries may influence the regression results. For example, when we delete data for Chile and Poland, that have SHI, and that are characterized by relatively low IRD, the coefficient of DSHI becomes statistically insignificant at the 10 percent level in both functional forms. Still, the coefficients of DARS all remain significant at the 1 percent level. These regression results are presented in Tables 2a and 2b in Appendix D.

The *full sample* results for the **index of equality of child survival (IECS)**, in Tables 5a and 5b of Appendix C show that both DARS and DMRS have statistically significant impacts in several of the regressions. We also notice that the coefficient of DSHI is statistically significant in regressions 2, 5 and 6. Similar results are obtained when using the *restricted sample*; see Tables 3a and 3b of Appendix D. Again the number of countries with universal coverage in both the full and restricted samples is small, namely 7. One country, Uzbekistan (with a GT health financing system), has a particularly low value for IECS[18]. When we delete this country's data from the sample, the statistically significant effect of DSHI disappears; we refer to the regression results in Tables 3a and 3b of Appendix E. According to the Akaike criterion and the adjusted R^2, regression 4 is the best for both functional forms. The coefficients all have the expected sign. DARS and DMRS are statistically significant at the 1 percent and 5 percent level, respectively.

[18] The IECS of Uzbekistan is 0.632.

Estimation results with the GINI index as an explanatory variable in the equations for the distributional measures

For the estimation of the enlarged model (equations 4a and 4b), we have used the *restricted samples* only. We will only present the "best" equations according to the adjusted R^2 and/or the Akaike criterion.

We first refer to Table 1 of Appendix F. In both functional forms of the **fair financing equation (IFFC)**, the coefficients of the GINI index[19] have the anticipated sign but are not statistically significant. The coefficients of DARS are also not statistically significant. Both equations have very low explanatory power.

Related to the **distribution of responsiveness (IRD)**, both functional forms show significant impacts of both DARS and DMRS, as well as of the GINI index. All coefficients have the expected sign. One can conclude that these risk-sharing arrangements are efficient in counterbalancing the overall effect of income inequality. A threshold for the GINI indices can be computed, indicating the value above which risk sharing is no longer able to counteract the effect of overall income inequality. In the case of a country with an advanced risk-sharing scheme, the threshold value is between 56.9[20] and 57.9.[21] In the case of medium risk-sharing schemes, the threshold is between 25.6[22] and 26.3[23]. From these estimates, one can infer that advanced risk-sharing schemes are more effective in counteracting the effects of overall income inequality in society. For example, let us assume that a country has a GINI of 35. If this country has an advanced risk-sharing scheme, its effect will outweigh the impact of income equality. Using the regression estimates for the first functional form, the combined effect will be +0.8588 [24]. However, if the country has a medium-risk sharing arrangement, the combined effect will be –0.3252 [25]. Note that these results are sensitive, however, to the exclusion of values for specific countries. For instance, using the *more* restricted sample (thereby excluding the data for Poland and Chile[26]), the coefficients of DARS and DMRS remain statistically significant. However, the coefficients of GINI are no longer statistically significant at the 10 percent level.

In the regression results related to the **inequality of child survival (IECS),** the sign of the GINI coefficients is against our expectations. Surprisingly, the coefficient of GINI is also statistically significant at the 10 percent level, at least in the first functional form. In the second functional form, the coefficient of GINI is not statistically different from zero, however. The coefficients of DARS have the anticipated sign, however, and are both statistically significant at the 1 percent level.

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[19] In the regressions, these were entered in percentage terms.

[20] Derived from the equation (2nd functional form): 0.0352*GINI - 2.0025 = 0.

[21] Derived from the equation (logit specification): -0.0375*GINI + 2.1713 = 0.

[22] Derived from the equation (2nd functional form): 0.0352*GINI - 0.8994 = 0.

[23] Derived from the equation (logit specification): -0.0375*GINI + 0.9873 = 0.

[24] +0.8588=2.1713—0.0375*35

[25] -0.3252=0.9873—0.0375*35

[26] Chile and Poland have lower values for IRD than other countries, namely 0.918 and 0.970, respectively.

Specifications were tested with interaction terms between the GINI and the organizational dummy variables. There is no general improvement in the regression results. In most of the equations, the coefficient associated with the GINI index loses its statistical significance. In addition, the coefficients associated with the interaction between GINI and the organizational variables frequently have opposite signs to what is expected. These results are therefore not presented or commented upon further.

Estimation results when using interaction terms with the ratio of public health expenditure to total health expenditure

Inclusion of the **interaction variables** with PHE% in equations 5a to 5e, and using the *restricted samples*, did not result in a general improvement of the estimation results. For instance, in a number of cases, the coefficients of DARS have the correct sign but are statistically insignificant. In other instances, the coefficient of DARS has a negative sign. One reason is likely to be multicollinearity; the correlation coefficient between DARS and DARS*PHE% was 0.9678, whereas the correlation between DMRS and DMRS*PHE% was 0.9165. The subsequent use of DARS*PHE% together with DARS, GINI and GINI*DARS gave unattractive results as well.

Further estimations were done with *transformed* interaction variables. In the case of the interaction between DARS and PHE%, the variable constructed was DARS*(PHE%-0.5). The coefficient associated with this variable reveals the impact of the difference between PHE% and a threshold of 50 percent. The advantage of using this variable was that it reduced the correlation with DARS; the correlation coefficient now becomes 0.7545. The results for IR, IFFC, IRD and IECS are not satisfactory: the coefficient of the new interaction variable has a wrong sign, is not statistically significant, or both. Only in the case of DALE did we obtain a satisfactory result: both the coefficients of DARS and the interaction variable have the expected sign and are statistically significant. The latter is presented in Table 2 in Appendix F. In other words, for those advanced risk-sharing systems with a PHE% above 50 percent, the level of PHE% reinforces the "average" effect of DARS. For instance, in the case of Oman with a PHE% of 63.31 percent, the combined impact of DARS and DARS*(PHE% - 0.50) becomes -0.2694. For those countries with a PHE% below 50 percent (Chile, Republic of Korea, Brunei Darussalam and United Arab Emirates), the initial effect of DARS is weakened. For instance, for Chile with a PHE% of 40.10 percent, the combined effect of DARS and DARS*(PHE% - 0.50) on the dependent variable becomes –0.1637.

Key conclusions

A first conclusion from the estimates is that the degree of advanced risk sharing, as measured by the dummy variable DARS, is significant in the equations for four of the five goal measurements. No impact could be found in the case of the index of fair financing, but we submit this is due to the inadequate sample. In addition, in at least two of these measurements (level of responsiveness, distribution of health), the variable DMRS also has been shown to have a statistically significant impact.

Second, when enlarging the set of explanatory variables in the models for the distributional measures with the GINI index, DARS remains statistically significant in the equations for IRD and IECS. In addition, DMRS has a statistically significant impact in the equations for IRD. An additional interpretation emerges from the results, namely that risk sharing corrects for, or may even outweigh, the negative effect of overall income inequality on the fair financing index and the index of distribution of responsiveness.

Third, using interaction terms with PHE% leads to plausible results for DALE only: the level of PHE% reinforces the average positive effect of advanced risk sharing.

Preliminary analysis with updated data

Since publication of the *WHR 2000*, WHO has developed updated estimates for the level (HEC) and share of public health expenditure in total health expenditure (PHE%). When using updated data for HEC in the equations for DALE and IR, results (in terms of explanatory power, sign and statistical significance of coefficients) similar to those presented here are obtained. The use of the updated PHE% does not significantly change the estimates for the equations with the interaction terms.

Estimates of the index of fair financing (IFFC) were also obtained for an additional 30 countries. Reestimation of the equations using an enlarged sample of 50, now leads to two interesting results: (i) the advanced risk-sharing dummy variable DARS exerts a statistically significant effect on the fair financing index; (ii) the GINI index has a statistically significant impact on IFFC but is counterbalanced by a health financing system characterized by advanced risk-sharing. These preliminary results prove to be more in line with those obtained for the other distributional measures.

D. COMMUNITY RISK-SHARING ARRANGEMENTS: FURTHER NEED TO MEASURE THEIR IMPACT

Community-risk sharing arrangements are increasingly recognized as an intermediate response to the constraints that many countries experience to rapidly extending financial risk protection to the national population. A body of research exists with respect to community financing arrangements and their functioning within communities, districts or regions. Information at the national level is clearly lacking. We have made an attempt to scan the literature and other sources,[27] to see whether community risk-sharing organizations exist at country level. We refer to Table 4 of Appendix I, where we divided countries into an "information" and "no information" subcategory. Only countries with low to medium risk sharing will be considered, as countries with advanced risk sharing in principle do not need to be complemented by community risk-sharing schemes.

We recorded that in the set of countries with a public health expenditure ratio of 50 to 75 percent, 25 out of 44 countries have community risk-sharing schemes operating. In the countries with a ratio below 50 percent, 42 out of 58 are reported to have such schemes. This is not unexpected, as we would expect community risk-sharing schemes to be established where governments are not able to make sufficient advance in risk protection. However, these data are insufficient for econometric analysis. Further work is needed about the quantitative importance of community risk-sharing arrangements at the country level. The latter could be measured by the number of risk-sharing schemes and the percentage of population covered by such schemes. Alternatively, one could measure the ratio of the expenditures incurred by such schemes to overall private health expenditure. The higher this ratio, the greater is the effort to share risks. Current work on National Health Accounts at WHO goes into this direction, by attempting to collect data on

[27] Especially Atim (1998), Bennett, Creese and Monasch (1998), Carrin, De Graeve and Devillé (1999), ILO and PAHO (1999) and Ginneken van (1999).

expenditure by nongovernmental institutions and communities. Further work is needed on identifying the part of this expenditure that is spent within the framework of risk-sharing arrangements.

VI. CONCLUDING REMARKS

The results presented give empirical support for the hypothesis that the degree of risk sharing in health financing organizations matters for health system attainment, as measured by the five indicators. Especially the categorical variables indicating whether a country has a health financing organization with advanced or medium risk-sharing categories, are seen to have a significant impact. These effects prove to be quite robust, after introducing the GINI index among the explanatory variables in the models for the distributional measures.

We noted that the plausibility of the results improves when using the restricted samples, deleting data for those countries whose classification was considered uncertain. Further information will be necessary to address this uncertainty. In general, final data for larger samples of countries are welcome for four of the health system attainment indices, especially for the index of fair financing contribution (IFFC), so that these better reflect the patterns of risk sharing in the world. In the current samples, some of the risk-sharing schemes are underrepresented, which has entailed sensitivity of the results to specific data points.

Further work could also be done on designing much more refined quantitative measures for the degree of risk sharing. Indeed, within each of the categories of health financing organization that we considered, a further variety in the degree of financial protection of different population subgroups may well be present.

In addition, more work needs to be undertaken to measure the quantitative importance of risk-sharing schemes for communities and the informal sector at the country level as well as their depth of risk sharing. Only then can further econometric analysis be undertaken. In the meantime, given the empirical results obtained so far, one can clearly hypothesize beneficial impacts of these schemes on the health system attainment indicators.

VII. APPENDIXES

APPENDIX A

Classification Tables

Table 1: classification of Countries by degree of risk sharing in the health financing system

Advanced risk sharing		**Medium risk sharing**			**Low risk sharing**
Social Health insurance (SHI)	*General taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	***Afghanistan***
Australia	***Albania***	Colombia	Algeria	Botswana	***Angola***
Austria	***Antigua-Barbuda***	Ecuador	Andorra	Brazil	Armenia
Belgium	***Azerbaijan***	El Salvador	Argentina	Burkina Faso	Bahamas
Bulgaria	Bahrain	***Equatorial Guinea***	Bolivia	Burundi	Bangladesh
Chile	Barbados	Libya	Cape Verde	Cameroon	Benin
Costa Rica	Belarus	Mongolia	Congo	China	Bhutan
Croatia	Belize	Peru	Egypt	Côte d'Ivoire	Cambodia
Czech Republic	***Bosnia and Herzegovina***	Tunisia	***Gabon***	Dominican Republic	***Central African Republic***
Estonia	Brunei Darussalam	Uruguay	***Guinea***	Guatemala	***Chad***
France	Canada		Honduras	Guinea-Bissau	***Comoros***
Germany	Cook Islands		Lebanon	Haiti	D. R. of Congo
Greece	Cuba		***Mali***	India	***Djibouti***
Hungary	Cyprus		Mexico	Indonesia	***Eritrea***
Israel	***D. P.'s R. of Korea***		Namibia	Iran	Ethiopia
Japan	Denmark		Panama	Iraq	Fiji
Latvia	Dominica		Paraguay	Jordan	Gambia
Lithuania	Finland		Philippines	Kenya	Georgia
Luxembourg	Iceland		Senegal	Lesotho	Ghana
Monaco	Ireland		Turkey	Madagascar	Grenada
Netherlands	Italy		Venezuela	Mauritania	***Guyana***
Norway	Jamaica			Morocco	Kiribati
Poland	***Kazakhstan***			Mozambique	Lao People's D. R.
Republic of Korea	Kuwait			Myanmar	***Liberia***
Romania	Kyrgyzstan			Nicaragua	Malawi
San Marino	Malaysia			Niger	Maldives
Slovakia	Malta			Pakistan	Marshall Islands
Slovenia	Mauritius			South Africa	***Micronesia***
Switzerland	New Zealand			Thailand	Nauru
The F. Y. of Macedonia	***Niue***			Trinidad and Tobago	Nepal
Yugoslavia	Oman			United States of America	Nigeria
	Palau			Viet Nam	Papua New Guinea
	Portugal			Yemen	Rwanda
	Qatar				***Sao Tome and Principe***
					Sierra Leone
					Solomon Islands

Table 1 (continued): Classification of Countries by degree of risk sharing in the health financing system

Advanced risk sharing		**Medium risk sharing**			**Low risk sharing**
Social Health insurance (SHI)	*General taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	***Somalia*** Sri Lanka Sudan Suriname ***Swaziland*** Syrian Arab Republic Togo Tonga ***Tuvalu*** Uganda United Republic of Tanzania Vanuatu Zambia Zimbabwe
	Republic of Moldova ***Russia*** Saint Kitts and Nevis Saint Lucia *Saint Vincent A. T. G.* Samoa Saudi Arabia Seychelles ***Singapore*** Spain Sweden ***Tajikistan*** ***Turkmenistan*** ***Ukraine*** United Arab Emirates United kingdom Uzbekistan				

Table 2: Classification of countries by type of health financing system and by the share of public health expenditure in total health expenditure[1]

Public health expenditure as a percentage of total health expenditure	**Advanced risk sharing**		**Medium risk sharing**			**Low risk sharing**
	Social Health insurance (SHI)	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
75% to 100%	Belgium Bulgaria Costa Rica Croatia Czech Republic Estonia France Germany Hungary Israel Japan Lithuania Luxembourg Norway Slovakia Slovenia The F. Y. of Macedonia	***Albania*** ***Azerbaijan*** Belarus ***Bosnia and Herzegovina*** Cook Islands Cuba ***D. P.'s R. of Korea*** Denmark Ice land ***Ireland*** Kuwait ***Niue*** ***Palau*** Republic of Moldava ***Russia*** Samoa Saudi Arabia Sweden Seychelles ***Tajikistan*** ***Turkmenistan*** ***Ukraine*** United Kingdom Uzbekistan	Mongolia	Andorra	Guinea-Bissau	***Chad*** ***Guyana*** Kiribati ***Micronesia*** Nauru Papua New Guinea ***Sao Tome and Principe*** Solomon Islands ***Tuvalu***

Notes: [1] Shares of public health expenditure in total health expenditure are taken from the World Health Report (WHO, 2000).

Table 2 (continued): Classification of countries by type of health financing system and by the share of public health expenditure in total health expenditure

Public health expenditure as a percentage of total health expenditure	**Advanced risk sharing**		**Medium risk sharing**			**Low risk sharing**
	Social Health insurance (SHI)	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
50% to 75%	Australia Austria Greece Latvia Monaco Netherlands Poland Romania San Marino Switzerland Yugoslavia	***Antigua-Barbuda*** Bahrain Barbados Belize Canada Dominica Finland Italy Jamaica ***Kazakhstan*** Kyrgyzstan Malaysia Malta Mauritius New Zealand Oman Portugal Qatar Saint Kitts and Nevis Saint Lucia Saint Vincent Spain	Colombia Ecuador ***Equatorial Guinea*** Libya	Algeria Argentina Bolivia Cape Verde ***Gabon*** ***Guinea*** Namibia Panama Senegal Turkey Venezuela	Botswana Guatemala Iraq Jordan Kenya Lesotho Madagascar Mozambique Nicaragua Trinidad and Tobago	Bhutan ***Central African Republic*** ***Comoros*** ***Eritrea*** Fiji Grenada Lao people's D. R. Liberia Malawi Maldives Marshall Islands Rwanda ***Somalia*** ***Swaziland*** United Rep. of Tanzania Vanuatu

Table 2 (continued): Classification of countries by type of health financing system and by the share of public health expenditure in total health expenditure

Public health expenditure as a percentage of total health expenditure	**Advanced risk sharing**		**Medium risk sharing**			**Low risk sharing**
	Social Health insurance (SHI)	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
<50%	Chile Republic of Korea	Brunei Darussalam Cyprus ***Singapore*** United Arab Emirates	El Salvador Peru Tunisia Uruguay	Congo Egypt Honduras Lebanon ***Mali*** Mexico Paraguay Philippines	Brazil Burkina Faso Burundi Cameroon China Côte d'Ivoire Dominican Republic Haiti India Indonesia Iran Mauritania Morocco Myanmar Niger Pakistan South Africa Thailand United States of America Viet Nam Yemen	***Afghanistan*** ***Angola*** Armenia Bahamas Bangladesh Benin Cambodia D. R. of Congo ***Djibouti*** Ethiopia Gambia Georgia Ghana Nepal Nigeria Sierra Leone Sri Lanka Sudan Suriname Syrian Arab Republic Togo Tonga Uganda Zambia Zimbabwe

Table 3: Classification of countries by type of health financing system and by income[1] group

Income level	**Advanced risk sharing**		**Medium risk sharing**			**Low risk sharing**
	Social Health insurance (SHI)	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
Low Income $ 760 or less		***Azerbaijan*** ***Bosnia and Herzegovina*** Kyrgyzstan Republic of Moldova	Mongolia	Congo ***Guinea*** Honduras ***Mali*** Senegal	Burkina Faso Burundi Cameroon China Côte d'Ivoire Guinea-Bissau Haiti India Indonesia Kenya Lesotho Madagascar Mauritania Mozambique Myanmar Nicaragua Niger Pakistan Viet Nam Yemen	***Afghanistan*** ***Angola*** Armenia Bangladesh Benin Bhutan Cambodia ***Central African Republic*** ***Chad*** ***Comoros*** Democratic Rep of Congo ***Djibouti*** ***Eritrea*** Ethiopia Gambia Ghana Kiribati Lao people's D. R. ***Liberia*** Malawi ***Micronesia*** Nepal Nigeria Rwanda ***Sao Tome and Principe*** Sierra Leone Solomon Islands ***Somalia***

Notes: [1] Income groups are defined according to 1998 GDP per capita in US dollars (World Bank, 2000)

Table 3 (continued): Classification of countries by type of health financing system and by income group

Income level	**Advanced risk sharing**		**Medium risk sharing**			**Low risk sharing**
	Social Health insurance (SHI)	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
Low Income $ 760 or less		***Tajikistan*** ***Turkmenistan***				Sudan Togo Tonga Uganda United Republic of Tanzania Zambia Zimbabwe
Lower-middle income $ 761 to $ 3030	Bulgaria Costa Rica Lithuania Romania The F. Y. of Macedonia Yugoslavia	***Albania*** Belarus Belize Cuba ***D. P.'s R. of Korea*** Dominica Jamaica ***Kazakhstan*** ***Niue*** ***Russia*** Saint Vincent and the Grenadines Samoa ***Ukraine*** Uzbekistan	Colombia Ecuador El Salvador ***Equatorial Guinea*** Peru Tunisia	Cape Verde Algeria Bolivia Paraguay Egypt Namibia Philippines	Dominican Republic Guatemala Iran Iraq Jordan Morocco Thailand	Fiji Georgia ***Guyana*** Maldives Marshall Islands Papua New Guinea Sri Lanka Suriname Syrian Arab Republic ***Swaziland*** Vanuatu

Table 3 (continued): Classification of countries by type of health financing system and by income group

Income level	Advanced risk sharing		Medium risk sharing			Low risk sharing
	Social Health insurance	*General Taxation*	*All employees and self-employed (with some exclusions) covered by health insurance*	*All employees covered by health insurance*	*Specific groups only covered by health insurance*	
Upper-middle income $ 3031 to $ 9630	Chile Croatia Czech Republic Estonia Hungary Poland Republic of Korea Slovakia	***Antigua-Barbuda*** Bahrain Barbados Cook Islands Malaysia Mauritius Oman ***Palau*** Saint Kitts and Nevis Saint Lucia Saudi Arabia Seychelles	Libya Uruguay	Argentina ***Gabon*** Lebanon Mexico Panama Turkey Venezuela	Botswana Brazil Trinidad and Tobago South Africa	Grenada Nauru
High Income $ 9361 or more	Australia Austria Belgium France Germany Greece Israel Japan Latvia Luxembourg Monaco Netherlands Norway San Marino Slovenia Switzerland	Brunei Darussalam Canada Cyprus Denmark Finland Iceland Ireland Italy Kuwait Malta New Zealand Portugal Qatar ***Singapore*** Spain Sweden United Arab Emirates United Kingdom		Andorra	United States of America	Bahamas ***Tuvalu***

Table 4: Classification of countries by health financing system and by the share of public expenditure in total health expenditure[1], and by the information on community financing

Public health expenditure as a percentage of total health expenditure	**Medium risk sharing**						**Low risk sharing**	
	All employees and self-employed (with some exclusions) covered by health insurance		*All employees covered by health insurance*		*Specific groups only covered by health insurance*		Community financing Information	Community financing No Information
	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information		
75% to 100%	Mongolia			Andorra	Guinea Bissau		***Chad*** ***Guyana*** Papua New Guinea	Kiribati ***Micronesia*** Nauru ***Sao Tome and Principe*** Solomon Islands ***Tuvalu***

Notes: [1] Shares of public health expenditure in total health expenditure are taken from the WHR 2000.

Table 4 (continued): Classification of countries by health financing system and by the share of public expenditure in total health expenditure and by the information on community financing

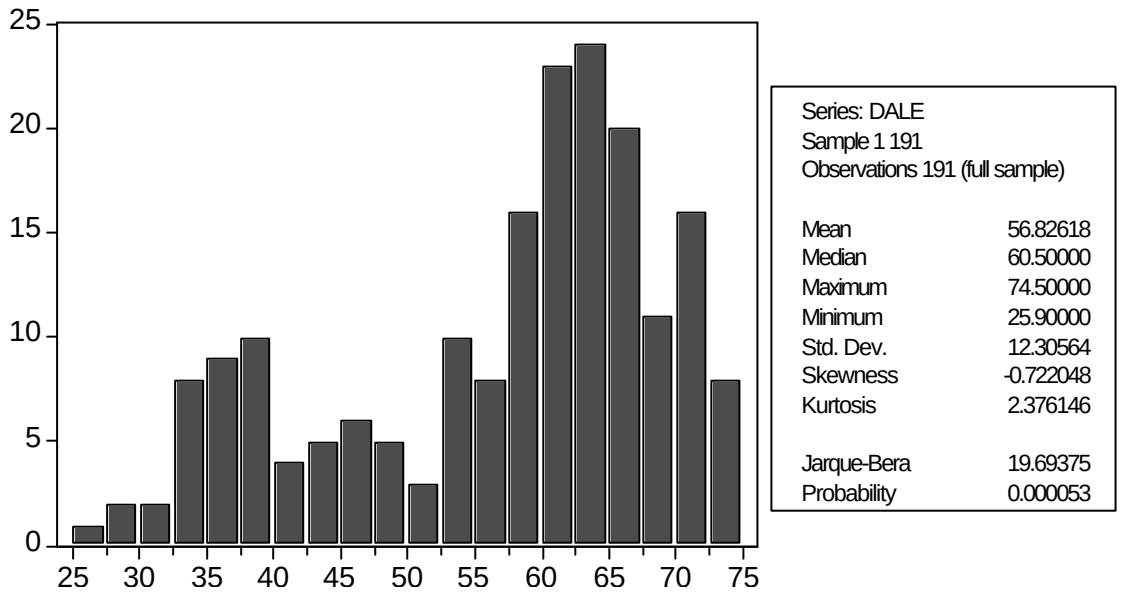
Public health expenditure as a percentage of total health expenditure	**Medium risk sharing**						**Low risk sharing**	
	All employees and self-employed (with some exclusions) covered by health insurance		*All employees covered by health insurance*		*Specific groups only covered by health insurance*		Community financing Information	Community financing No Information
	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information		
50% to 75%	Ecuador Equatorial Guinea	Libya	Argentina Bolivia Colombia ***Guinea*** Panama Senegal Venezuela	Algeria Cape Verde ***Gabon*** Namibia Turkey	Guatemala Jordan Kenya Madagascar Mozambique Nicaragua Trinidad and Tobago	Botswana Iraq Lesotho	***Comoros*** Grenada Malawi U. R. of Tanzania	Bhutan Central African R. ***Eritrea*** Fiji Lao People's D. R. Liberia Maldives Marshall Islands Rwanda ***Somalia*** ***Swaziland*** Vanuatu

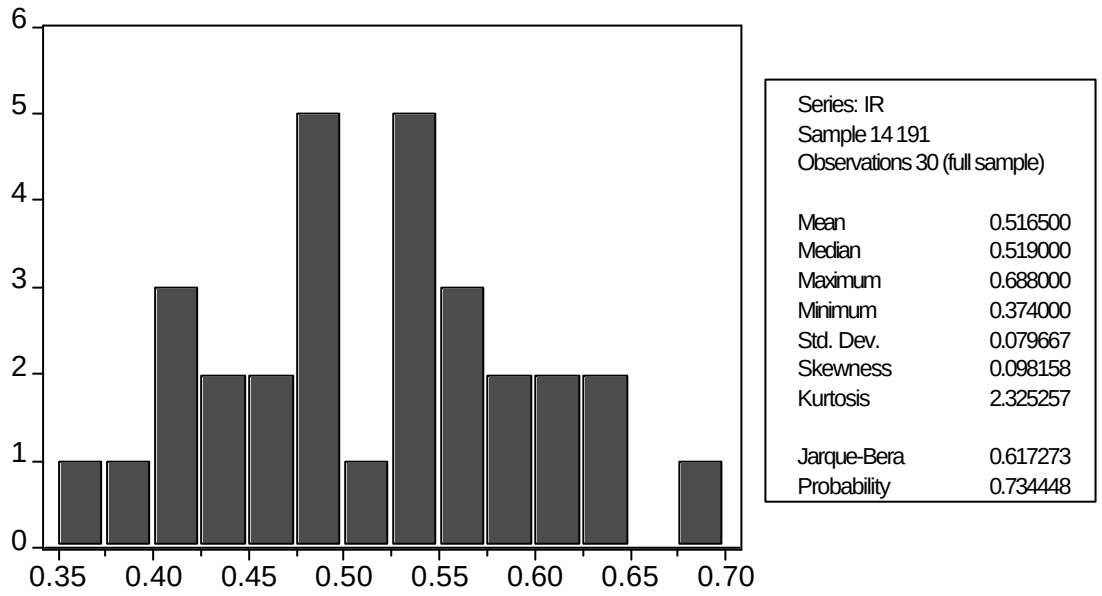
Table 4 (continued): Classification of countries by health financing system and by the share of public expenditure in total health expenditure, and by the information on community financing

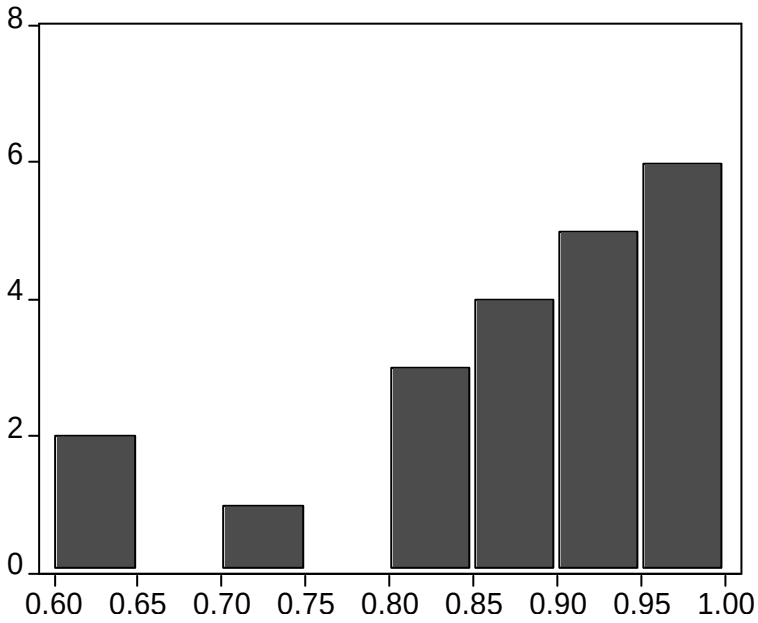
Public health expenditure as a percentage of total health expenditure	**Medium risk sharing**						**Low risk sharing**	
	All employees and self-employed (with some exclusions) covered by health insurance		*All employees covered by health insurance*		*Specific groups only covered by health insurance*			
	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information	Community financing Information	Community financing No Information
<50%	El Salvador Peru Uruguay	Tunisia	Congo Honduras ***Mali*** Mexico Paraguay Philippines	Egypt Lebanon	Brazil Burkina Faso Burundi Cameroon China Côte d'Ivoire Dominican Republic Haiti India Indonesia Iran Myanmar Niger South Africa Thailand United States of America Viet Nam	Mauritania Morocco Pakistan Yemen	Bahamas Bangladesh Benin Cambodia D. R. of Congo ***Djibouti*** Ethiopia Ghana Nepal Nigeria Sri Lanka Suriname Togo Uganda Zambia Zimbabwe	***Afghanistan*** ***Angola*** Armenia Gambia Georgia Sierra Leone Sudan Syrian A. R. Tonga

APPENDIX B

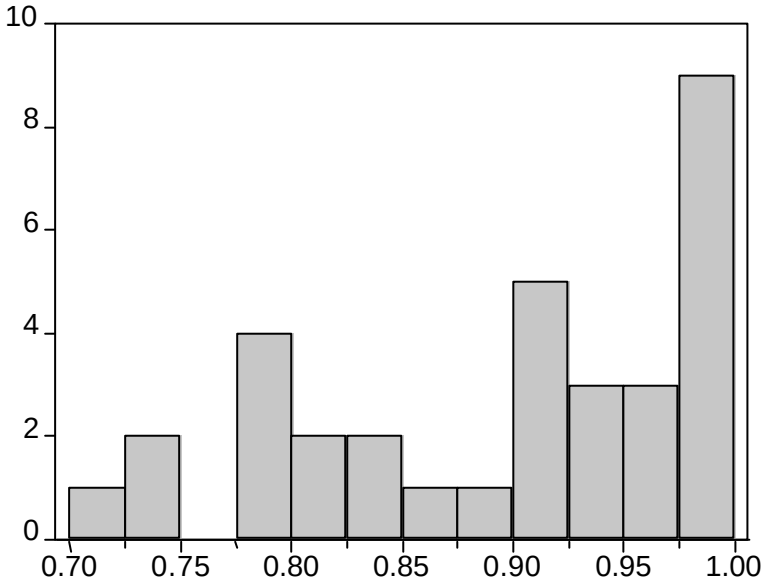
Histograms and Descriptive Statistics of Health System Attainment Indicators


25
20
15
10
5
0
25 30 35 40 45 50 55 60 65 70 75
Series: DALE
Sample 1 191
Observations 191 (full sample)
Mean 56.82618
Median 60.50000
Maximum 74.50000
Minimum 25.90000
Std. Dev. 12.30564
Skewness -0.722048
Kurtosis 2.376146
Jarque-Bera 19.69375
Probability 0.000053

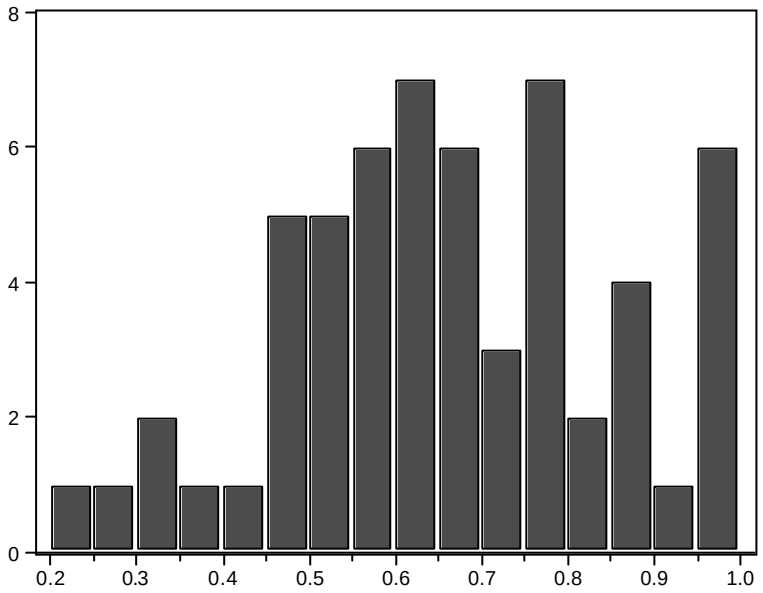

6
5
4
3
2
1
0
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
Series: IR
Sample 14 191
Observations 30 (full sample)
Mean 0.516500
Median 0.519000
Maximum 0.688000
Minimum 0.374000
Std. Dev. 0.079667
Skewness 0.098158
Kurtosis 2.325257
Jarque-Bera 0.617273
Probability 0.734448



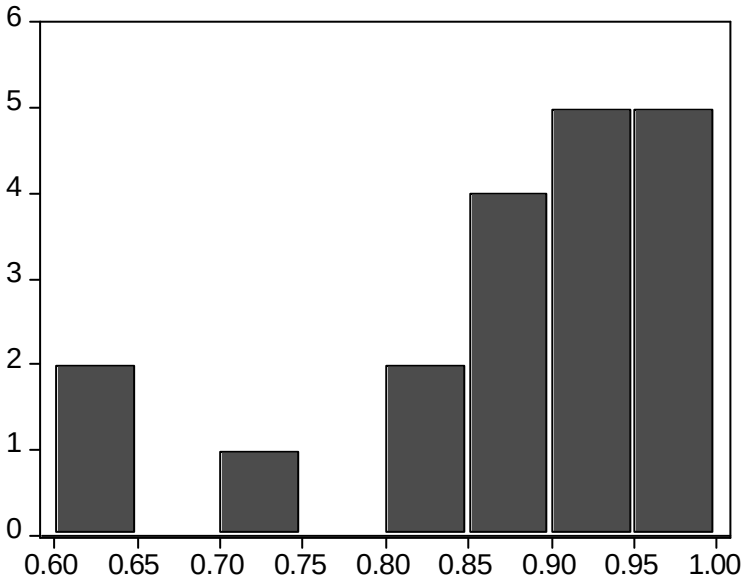
Series: IFFC	
Sample 14 190	
Observations 21(full sample)	
Mean	0.872952
Median	0.903000
Maximum	0.992000
Minimum	0.623000
Std. Dev.	0.105047
Skewness	-1.173836
Kurtosis	3.418909
Jarque-Bera	4.976166
Probability	0.083069



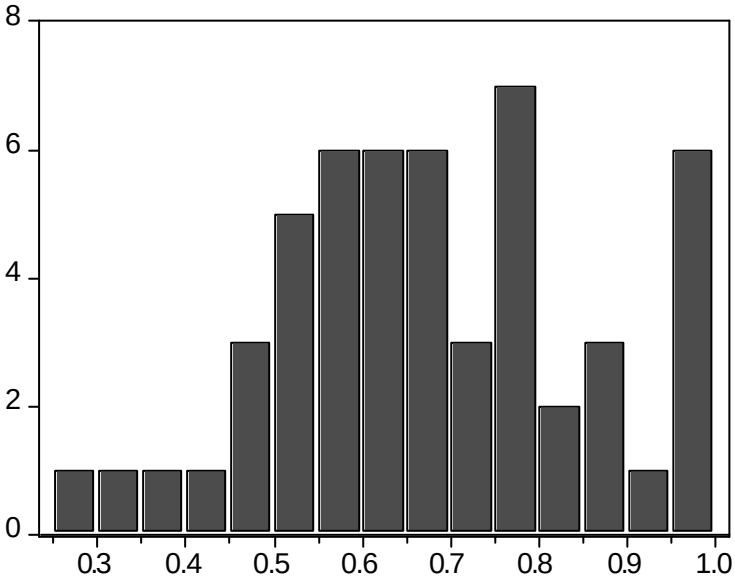
Series: IRD	
Sample 14 191	
Observations 33 (full sample)	
Mean	0.896724
Median	0.914000
Maximum	0.999900
Minimum	0.723000
Std. Dev.	0.086934
Skewness	-0.545552
Kurtosis	1.992005
Jarque-Bera	3.034020
Probability	0.219367



Series: IECS	
Sample 14 191	
Observations 58 (full sample)	
Mean	0.665948
Median	0.648000
Maximum	0.999000
Minimum	0.245000
Std. Dev.	0.191684
Skewness	-0.065030
Kurtosis	2.522016
Jarque-Bera	0.593013
Probability	0.743411



Series: IFFC	
Sample 14 190	
Obs. 19 (restricted sample)	
Mean	0.872053
Median	0.903000
Maximum	0.992000
Minimum	0.623000
Std. Dev.	0.107470
Skewness	-1.210402
Kurtosis	3.406341
Jarque-Bera	4.770114
Probability	0.092084



Series: IECS	
Sample 14 191	
Obs. 52 (restricted sample)	
Mean	0.684269
Median	0.657000
Maximum	0.999000
Minimum	0.261000
Std. Dev.	0.180362
Skewness	0.022189
Kurtosis	2.528239
Jarque-Bera	0.486477
Probability	0.784084

APPENDIX C

Regression Results with Full Samples

Table 1: Regression results on DALE[1]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	4.9490 (0.2964) (16.6978)	4.9321 (0.2956) (16.6825)	4.9548 (0.2972) (16.6699)	4.8910 (0.3043) (-9.4826)	4.9379 (0.2964) (16.6570)	4.8725 (0.3035) (16.0564)
HEC	-0.1936 (0.0191) (-10.1390)	-0.1929 (0.0190) (-10.1365)	-0.1907 (0.0197) (-9.6951)	-0.1884 (0.0199) (-9.4826)	-0.1900 (0.0196) (-9.6873)	-0.1876 (0.0198) (-9.4727)
EDU	-0.2121 (0.0758) (-2.7968)	-0.2087 (0.0756) (-2.7598)	-0.2102 (0.0761) (-2.7637)	-0.1967 (0.0774) (-2.5412)	-0.2068 (0.0759) (-2.7258)	-0.1928 (0.0772) (-2.4993)
DARS	-0.2969 (0.0633) (-4.6922)	-0.2554 (0.0699) (-3.6531)	-0.3291 (0.0819) (-4.0161)	-0.3418 (0.0831) (-4.1109)	-0.2883 (0.0868) (-3.3217)	-0.3008 (0.0879) (-3.4230)
DSHI		-0.1031 (0.0749) (-1.3769)			-0.1038 (0.0751) (-1.3834)	-0.1052 (0.0753) (-1.3966)
DMRS			-0.0377 (0.0609) (-0.6197)	-0.0831 (0.1043) (-0.7968)	-0.0390 (0.0607) (-0.6428)	-0.0858 (0.1039) (-0.8260)
DMRS1				0.0004 (0.1071) (0.0039)		0.0012 (0.1067) (0.0113)
DMRS2				0.0790 (0.1027) (0.7687)		0.0811 (0.1024) (0.7921)
R-squared	0.7995	0.8023	0.8000	0.8019	0.8029	0.8048
Adjusted R-squared	0.7949	0.7963	0.7939	0.7926	0.7954	0.7942
S.E. of regression	0.2599	0.2590	0.2605	0.2613	0.2596	0.2603
Ak. Info criterion	0.1717	0.1720	0.1834	0.2037	0.1835	0.2033
Sample size	136	136	136	136	136	136

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 2a: Regression results[1] on the level of responsiveness (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-0.3865	-0.4238	-0.4509	-0.4575	-0.4893	-0.4985
	(0.2514)	(0.2456)	(0.2392)	(0.2523)	(0.2312)	(0.2442)
	(-1.5374)	(-1.7255)	(-1.8851)	(-1.8133)	(-2.1169)	(-2.0413)
HEC	0.0004	0.0003	0.0004	0.0003	0.0002	0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
	(1.4829)	(1.0452)	(1.2662)	(1.1605)	(0.8084)	(0.7077)
EDU	0.0040	0.0046	0.0026	0.0027	0.0031	0.0033
	(0.0029)	(0.0028)	(0.0028)	(0.0030)	(0.0027)	(0.0029)
	(1.3868)	(1.6103)	(0.9178)	(0.8985)	(1.1479)	(1.1273)
DARS	0.1380	0.3946	0.3696	0.3708	0.6328	0.6381
	(0.1469)	(0.2201)	(0.1814)	(0.1905)	(0.2351)	(0.2475)
	(0.9395)	(1.7930)	(2.0370)	(1.9661)	(2.6911)	(2.5780)
DSHI		-0.3397			-0.3452	-0.3492
		(0.2217)			(0.2067)	(0.2171)
		(-1.5321)			(-1.6697)	(-1.6081)
DMRS			0.2517	0.2272	0.2543	0.2245
			(0.1275)	(0.1892)	(0.1226)	(0.1821)
			(1.9743)	(1.2008)	(2.0744)	(1.2331)
DMRS1				0.0151		0.0129
				(0.1908)		(0.1836)
				(0.0792)		(0.0700)
DMRS2				0.0361		0.0465
				(0.1678)		(0.1617)
				(0.2151)		(0.2876)
R-squared	0.3342	0.3984	0.4344	0.4359	0.5007	0.5034
Adjusted R-squared	0.2473	0.2890	0.3315	0.2666	0.3818	0.3205
S.E. of regression	0.2519	0.2448	0.2374	0.2486	0.2283	0.2393
Ak. Info criterion	0.2163	0.1890	0.1273	0.2728	0.0767	0.2193
Sample size	27	27	27	27	27	27

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 2b: Regression results[1] on the level of responsiveness Log [1–IR]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	0.2387 (0.4554) (-0.5243)	-0.1483 (0.4341) (0.3417)	-0.2327 (0.4359) (0.5338)	-0.2033 (0.4651) (-0.4371)	-0.1397 (0.4091) (-0.3414)	-0.1027 (0.4368) (-0.2351)
HEC	-0.0299 (0.0267) (-1.1205)	-0.0237 (0.0255) (-0.9302)	-0.0141 (0.0271) (-0.5226)	-0.0119 (0.0291) (-0.4082)	-0.0073 (0.0254) (-0.2873)	-0.0045 (0.0274) (-0.1631)
EDU	-0.0780 (0.1122) (-0.6954)	-0.1038 (0.1071) (-0.9690)	-0.0716 (0.1074) (-0.6663)	-0.0800 (0.1152) (-0.6938)	-0.0979 (0.1010) (-0.9693)	-0.1085 (0.1085) (-1.0001)
DARS	-0.1004 (0.0732) (-1.4159)	-0.2486 (0.1031) (-2.4117)	-0.2257 (0.0986) (-2.2899)	-0.2292 (0.1038) (-2.2084)	-0.3782 (0.1178) (-3.2107)	-0.3840 (0.1240) (-3.0957)
DSHI		0.2075 (0.1092) (1.9010)			0.2131 (0.1029) (2.0708)	0.2150 (0.1077) (1.9961)
DMRS			-0.1232 (0.0700) (-1.7608)	-0.1119 (0.1010) (-1.1080)	-0.1269 (0.0653) (-1.9445)	-0.1134 (0.0942) (-1.2030)
DMRS1				0.0006 (0.1011) (0.0055)		-0.0275 (0.0943) (0.0120)
DMRS2				-0.0225 (0.0896) (-0.2515)		-0.0275 (0.0836) (-0.3290)
R-squared	0.3193	0.4153	0.4034	0.4066	0.5045	0.5095
Adjusted R-squared	0.2305	0.3090	0.2949	0.2286	0.3866	0.3288
S.E. of regression	0.1316	0.1247	0.1259	0.1317	0.1175	0.1229
Ak. Info criterion	-1.0826	-1.1606	-1.1403	-0.9977	-1.2521	-1.1140
Sample size	27	27	27	27	27	27

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 3a: Regression results[1] on the fairness of financial contribution to health systems (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	2.3447 (0.2632) (8.9079)	2.3447 (0.2694) (8.7026)	2.4902 (0.4820) (5.1666)	2.4902 (0.4887) (5.0954)	2.4902 (0.4941) (5.0399)	2.4902 (0.5027) (4.9538)
DARS	-0.3267 (0.5394) (-0.6057)	-0.4710 (0.6780) (-0.6946)	-0.4723 (0.6816) (-0.6929)	-0.4723 (0.6912) (-0.6833)	-0.6165 (0.8069) (-0.7641)	-0.6165 (0.8209) (-0.7510)
DSHI		0.3605 (0.9838) (0.3665)			0.3605 (1.0086) (0.3575)	0.3605 (1.0261) (0.3514)
DMRS			-0.2117 (0.5813) (-0.3642)	0.6288 (0.9143) (0.6877)	-0.2117 (0.5959) (-0.3553)	0.6288 (0.9404) (0.6686)
DMRS1				-0.9005 (0.9976) (-0.9026)		-0.9005 (1.0261) (-0.8776)
DMRS2				-1.0907 (0.8923) (-1.2224)		-1.0907 (0.9178) (-1.1885)
R-squared	0.0189	0.0262	0.0261	0.1099	0.0334	0.1172
Adjusted R-squared	-0.0327	-0.0820	-0.0821	-0.1126	-0.1372	-0.1771
S.E. of regression	1.0529	1.0777	1.0777	1.0928	1.1048	1.1241
Ak. Info criterion	3.0313	3.1191	3.1192	3.2197	3.2069	3.3067
Sample size	21	21	21	21	21	21

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 3b: Regression results[1] on the fairness of financial contribution to health systems Log [1–IHFC]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-2.4903 (0.2332) (-10.6801)	-2.4903 (0.2387) (-10.4341)	-2.6060 (0.4273) (-6.0992)	-2.6060 (0.4311) (-6.0450)	-2.6060 (0.4380) (-5.9496)	-2.6060 (0.4434) (-5.8773)
DARS	0.3351 (0.4779) (0.7012)	0.4630 (0.6006) (0.7708)	0.4508 (0.6043) (0.7661)	(0.4508) (0.6097) (0.7395)	0.5787 (0.7153) (0.8091)	0.5787 (0.7241) (0.7992)
DSHI		-0.3197 (0.8715) (-0.3668)			-0.3197 (0.8941) (-0.3576)	-0.3197 (0.9051) (-0.3532)
DMRS			0.1684 (0.5153) (0.3267)	-0.6255 (0.8065) (-0.7756)	0.1684 (0.5283) (0.3187)	-0.6255 (0.8295) (-0.7541)
DMRS1				0.9010 (0.8799) (1.0239)		0.9010 (0.9051) (0.9955)
DMRS2				1.0049 (0.7871) (1.2768)		1.0049 (0.8095) (1.2414)
R-squared	0.0252	0.0325	0.0310	0.1231	0.0382	0.1303
Adjusted R-squared	-0.0261	-0.0750	-0.0767	-0.0961	-0.1315	-0.1595
S.E. of regression	0.9327	0.9547	0.9554	0.9640	0.9794	0.9915
Ak. Info criterion	2.7889	2.8767	2.8782	2.9688	2.9659	3.0557
Sample size	21	21	21	21	21	21

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 4a: Regression results[1] on the distribution of responsiveness of health systems (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	2.1440 (0.2640) (8.1220)	2.1440 (0.2488) (8.6176)	1.6327 (0.4843) (3.3712)	1.6327 (0.4900) (3.3324)	1.6327 (0.4548) (3.5903)	1.6327 (0.4588) (3.5591)
DARS	2.4428 (0.5055) (4.8328)	3.7145 (0.7464) (4.9767)	2.9540 (0.6458) (4.5745)	2.9540 (0.6533) (4.5218)	4.2257 (0.8303) (5.0895)	4.2257 (0.8376) (5.0452)
DSHI		-1.9075 (0.8618) (-2.2133)			-1.9075 (0.8508) (-2.2420)	-1.9075 (0.8583) (-2.2225)
DMRS			0.7217 (0.5755) (1.2542)	0.0493 (0.8946) (0.0552)	0.7217 (0.5403) (1.3357)	0.0493 (0.8376) (0.0589)
DMRS1				1.0846 (0.9467) (1.1457)		1.0846 (0.8864) (1.2237)
DMRS2				0.6675 (0.8642) (0.7724)		0.6675 (0.8092) (0.8249)
R-squared	0.4297	0.5097	0.4581	0.4824	0.5382	0.5624
Adjusted R-squared	0.4113	0.4771	0.4220	0.4084	0.4904	0.4814
S.E. of regression	1.2932	1.2188	1.2814	1.2963	1.2032	1.2137
Ak. Info criterion	3.4108	3.3201	3.4203	3.4957	3.3210	3.3883
Sample size	33	33	33	33	33	33

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 4b: Regression results[1] on the distribution of responsiveness of health systems Log [1—IRD]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-2.2917 (0.2527) (-9.0671)	-2.2917 (0.2368) (-9.6763)	-1.8309 (0.4651) (-3.9365)	-1.8309 (0.4717) (-3.8819)	-1.8309 (0.4343) (-4.2159)	-1.8309 (0.4392) (-4.1686)
DARS	-2.3185 (0.4840) (-4.7905)	-3.5783 (0.7105) (-5.0363)	-2.7792 (0.6201) (-4.4816)	-2.7792 (0.6289) (-4.4194)	-4.0390 (0.7989) (-5.0940)	-4.0390 (0.8019) (-5.0369)
DSHI		1.8897 (0.8204) (2.3034)			1.8897 (0.8125) (2.3259)	1.8897 (0.8217) (2.2998)
DMRS			-0.6505 (0.5526) (-1.1771)	-0.0531 (0.8611) (-0.0617)	-0.6505 (0.5160) (-1.2606)	-0.0531 (0.8019) (-0.0663)
DMRS1				-0.9857 (0.9113) (-1.0816)		-0.9857 (0.8486) (-1.1615)
DMRS2				-0.5807 (0.8319) (-0.6980)		-0.5807 (0.7747) (-0.7496)
R-squared	0.4254	0.5117	0.4508	0.4728	0.5371	0.5592
Adjusted R-squared	0.4068	0.4792	0.4141	0.3975	0.4892	0.4776
S.E. of regression	1.2382	1.1602	1.2306	1.2479	1.1490	1.1620
Ak. Info criterion	3.3239	3.2216	3.3393	3.4195	3.2289	3.3012
Sample size	33	33	33	33	33	33

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 5a: Regression results[1] on the equality of child survival (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	0.6246	0.6246	0.1291	0.1291	0.1291	0.1291
	(0.1715)	(0.1459)	(0.2883)	(0.2901)	(0.2413)	(0.2415)
	(3.6431)	(4.2809)	(0.4480)	(0.4452)	(0.5351)	(0.5346)
DARS	4.6707	2.5221	5.1662	5.1662	3.0175	3.0175
	(0.4935)	(0.6190)	(0.5338)	(0.5371)	(0.6231)	(0.6236)
	(9.4641)	(4.0742)	(9.6790)	(9.6186)	(4.8431)	(4.8385)
DSHI		3.7601			3.7601	3.7601
		(0.7958)			(0.7599)	(0.7606)
		(4.7276)			(4.9482)	(4.9435)
DMRS			0.7432	1.2244	0.7432	1.2244
			(0.3530)	(0.6646)	(0.2955)	(0.5534)
			(2.1052)	(1.8423)	(2.5148)	(2.2124)
DMRS1				-0.2691		-0.2691
				(0.7324)		(0.6099)
				(-0.3675)		(-0.4413)
DMRS2				-0.6458		-0.6458
				(0.6501)		(0.5413)
				(-0.9934)		(-1.1930)
R-squared	0.6153	0.7264	0.6440	0.6526	0.7551	0.7637
Adjusted R-squared	0.6084	0.7164	0.6310	0.6264	0.7414	0.7410
S.E. of regression	1.2244	1.0420	1.1885	1.1960	0.9949	0.9959
Ak. Info criterion	3.2766	2.9705	3.2336	3.2781	2.8942	2.9273
Sample size	58	58	58	58	58	58

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 5b: Regression results[1] on the equality of child survival Log [1–IECS]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-1.1287 (0.14356) (-7.8631)	-1.1287 (0.1149) (-9.8199)	-0.8065 (0.2452) (-3.2895)	-0.8065 (0.2479) (-3.2534)	-0.8065 (0.1936) (-4.1655)	-0.8065 (0.1949) (-4.1382)
DARS	-4.2511 (0.4132) (-10.2885)	-2.2139 (0.4877) (-4.5398)	-4.5733 (0.4540) (-10.0743)	-4.5733 (0.4590) (-9.9638)	-2.5361 (0.4999) (-5.0733)	-2.5361 (0.5032) (-5.0400)
DSHI		-3.5652 (0.6269) (-5.6868)			-3.5652 (0.6097) (-5.8476)	-3.5652 (0.6137) (-5.8092)
DMRS			-0.4834 (0.3003) (-1.6097)	-0.8033 (0.5680) (-1.4142)	-0.4834 (0.2371) (-2.0384)	-0.8033 (0.4465) (-1.7988)
DMRS1				0.1780 (0.6259) (0.2844)		0.1780 (0.4921) (0.3618)
DMRS2				0.4297 (0.5555) (0.7734)		0.4297 (0.4368) (0.9837)
R-squared	0.6540	0.7821	0.6696	0.6745	0.7977	0.8026
Adjusted R-squared	0.6478	0.7742	0.6576	0.6499	0.7864	0.7836
S.E. of regression	1.0251	0.8208	1.0108	1.0221	0.7983	0.8035
Ak. Info criterion	2.9214	2.4934	2.9098	2.9638	2.4537	2.4981
Sample size	58	58	58	58	58	58

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

APPENDIX D

Regression Results with Restricted Samples

Table 1: Regression results on DALE[1]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	4.9423 (0.3328) (14.8493)	4.9208 (0.3324) (14.3324)	4.9638 (0.3346) (14.8372)	4.8203 (0.3468) (13.8982)	4.9426 (0.3341) (14.7946)	4.7958 (0.3463) (13.8505)
HEC	-0.1919 (0.0197) (-9.7498)	-0.1914 (0.0196) (-9.7509)	-0.1883 (0.0203) (-9.2935)	-0.1841 (0.0204) (-9.0153)	-0.1878 (0.0202) (-9.2911)	-0.1835 (0.0204) (-9.0114)
EDU	-0.2141 (0.0834) (-2.5684)	-0.2096 (0.0832) (-2.5175)	-0.2141 (0.0835) (-2.5631)	-0.1833 (0.0858) (-2.1377)	-0.2094 (0.0834) (-2.5121)	-0.1780 (0.0856) (-2.0798)
DARS	-0.2963 (0.0654) (-4.5321)	-0.2546 (0.0730) (-3.4880)	-0.3411 (0.0875) (-3.9001)	-0.3640 (0.0886) (-4.1075)	-0.3000 (0.0930) (-3.2260)	-0.3221 (0.0939) (-3.4310)
DSHI		-0.0982 (0.0774) (-1.2700)			-0.0989 (0.0775) (-1.2769)	-0.1016 (0.0774) (-1.3139)
DMRS			-0.0520 (0.0673) (-0.7726)	-0.3640 (0.0886) (-4.1075)	-0.0530 (0.0671) (-0.7891)	-0.1380 (0.1129) (-1.2220)
DMRS1				0.0168 (0.1145) (0.1468)		0.0173 (0.1141) (0.1512)
DMRS2				0.1298 (0.1095) (1.1853)		0.1324 (0.1092) (1.2120)
R-squared	0.7874	0.7902	0.7885	0.7927	0.7913	0.7957
Adjusted R-squared	0.7821	0.7832	0.7813	0.7820	0.7825	0.7834
S.E. of regression	0.2639	0.2632	0.2643	0.2639	0.2636	0.2631
Ak. Info criterion	0.2049	0.2076	0.2161	0.2283	0.2185	0.2296
Sample size	124	124	124	124	124	124

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 2a: Regression results[1] on the fairness of financial contribution to health systems (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	2.2874 (0.2786) (8.2099)	2.2874 (0.2871) (7.9678)	2.3117 (0.5561) (4.1571)	2.3117 (0.5668) (4.0784)	2.3117 (0.5741) (4.0266)	2.3117 (0.5880) (3.9317)
DARS	-0.1146 (0.6072) (-0.1888)	-0.1762 (0.8370) (-0.2105)	-0.1390 (0.7864) (-0.1767)	-0.1390 (0.8016) (-0.1734)	-0.2005 (0.9944) (-0.2017)	-0.2005 (1.0184) (-0.1969)
DSHI		0.1231 (1.1118) (0.1107)			0.1231 (1.1482) (0.1072)	0.1231 (1.1759) (0.1047)
DMRS			-0.0332 (0.6494) (-0.0511)	0.8074 (0.9818) (0.8224)	-0.0332 (0.6704) (-0.0495)	0.8074 (1.0184) (0.7928)
DMRS1				-0.9005 (1.0349) (-0.8702)		-0.9005 (1.0735) (-0.8389)
DMRS2				-1.0907 (0.9256) (-1.1784)		-1.0907 (0.9601) (-1.1360)
R-squared	0.0021	0.0029	0.0023	0.0930	0.0030	0.0937
Adjusted R-squared	-0.0566	-0.1218	-0.1225	-0.1662	-0.1964	-0.2548
S.E. of regression	1.0791	1.1118	1.1122	1.1336	1.1482	1.1759
Ak. Info criterion	3.0894	3.1939	3.1945	3.3097	3.2990	3.4141
Sample size	19	19	19	19	19	19

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 2b: Regression results[1] on the fairness of financial contribution to health systems Log [1–IHFC]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-2.4400 (0.2470) (-9.8769)	-2.4400 (0.2545) (-9.5861)	-2.4465 (0.4931) (-4.9613)	-2.4465 (0.5000) (-4.8929)	-2.4465 (0.5091) (-4.8058)	-2.4465 (0.5186) (-4.7172)
DARS	0.1509 (0.5384) (0.2803)	0.2088 (0.7421) (0.2814)	0.1574 (0.6974) (0.2257)	0.1574 (0.7071) (0.2225)	0.2153 (0.8817) (0.2441)	0.2153 (0.8983) (0.2396)
DSHI		-0.1158 (0.9858) (-0.1174)			-0.1158 (1.0181) (-0.1137)	-0.1158 (1.0373) (-0.1116)
DMRS			0.0088 (0.5758) (0.0153)	-0.7851 (0.8660) (-0.9065)	0.0088 (0.5945) (0.0148)	-0.7851 (0.8983) (-0.8739)
DMRS1				0.9010 (0.9129) (0.9870)		0.9010 (0.9469) (0.9515)
DMRS2				1.0049 (0.8165) (1.2308)		1.0049 (0.8469) (1.1866)
R-squared	0.0046	0.0055	0.0046	0.1045	0.0055	0.1054
Adjusted R-squared	-0.0540	-0.1189	-0.1198	-0.1513	-0.1934	-0.2387
S.E. of regression	0.9568	0.9858	0.9862	1.0000	1.0181	1.0373
Ak. Info criterion	2.8488	2.9532	2.9541	3.0588	3.0585	3.1631
Sample size	19	19	19	19	19	19

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 3a: Regression results[1] on the equality of child survival (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	0.7248 (0.1677) (4.3223)	0.7248 (0.1507) (4.8106)	0.2798 (0.3097) (0.9037)	0.2798 (0.3097) (0.9035)	0.2798 (0.2761) (1.0134)	0.2798 (0.2747) (1.0189)
DARS	5.1209 (0.4937) (10.3730)	2.9990 (0.7381) (4.0629)	5.5659 (0.5511) (10.0999)	5.5659 (0.5512) (10.0980)	3.4439 (0.7562) (4.5540)	3.4439 (0.7522) (4.5786)
DSHI		3.1830 (0.8850) (3.5966)			3.1830 (0.8623) (3.6915)	3.1830 (0.8576) (3.7114)
DMRS			0.6203 (0.3656) (1.6965)	1.0737 (0.6385) (1.6815)	0.6203 (0.3260) (1.9025)	1.0737 (0.5662) (1.8963)
DMRS1				-0.1079 (0.7000) (-0.1542)		-0.1079 (0.6207) (-0.1739)
DMRS2				-0.6458 (0.6070) (-1.0638)		-0.6458 (0.5383) (-1.1997)
R-squared	0.6827	0.7490	0.7003	0.7125	0.7666	0.7787
Adjusted R-squared	0.6764	0.7388	0.6881	0.6880	0.7520	0.7547
S.E. of regression	1.1374	1.0219	1.1166	1.1168	0.9956	0.9903
Ak. Info criterion	3.1330	2.9372	3.1144	3.1500	2.9029	2.9265
Sample size	52	52	52	52	52	52

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 3b: Regression results[1] on the equality of child survival Log [1–IECS]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-1.1863 (0.1392) (-8.5222)	-1.1863 (0.1209) (-9.8145)	-0.8758 (0.2593) (-3.3780)	-0.8758 (0.2613) (-3.3518)	-0.8758 (0.2235) (-3.9178)	-0.8758 (0.2243) (-3.9049)
DARS	-4.7368 (0.4098) (-11.5594)	-2.7675 (0.5921) (-4.6737)	-5.0473 (0.4614) (-10.9400)	-5.0473 (0.4650) (-10.8550)	-3.0779 (0.6122) (-5.0277)	-3.0779 (0.6142) (-5.0112)
DSHI		-2.9540 (0.7099) (-4.1610)			-2.9540 (0.6980) (-4.2321)	-2.9540 (0.7003) (-4.2182)
DMRS			-0.4328 (0.3061) (-1.4138)	-0.7339 (0.5387) (-1.3625)	-0.4328 (0.2639) (-1.6398)	-0.7339 (0.4624) (-1.5874)
DMRS1				0.0694 (0.5905) (0.1175)		0.0694 (0.5068) (0.1369)
DMRS2				0.4297 (0.5121) (0.8390)		0.4297 (0.4395) (0.9775)
R-squared	0.7277	0.7988	0.7384	0.7451	0.8095	0.8162
Adjusted R-squared	0.7223	0.7906	0.7277	0.7234	0.7976	0.7962
S.E. of regression	0.9441	0.8198	0.9348	0.9421	0.8060	0.8086
Ak. Info criterion	2.7605	2.4964	2.7590	2.8098	2.4803	2.5213
Sample size	52	52	52	52	52	52

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

APPENDIX E

Regression Results with Restricted Samples
(Additional Deletion of Influential Data)

Table 1a: Regression results[1] on the level of responsiveness [2] (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-0.3943 (0.2361) (-1.6698)	-0.4209 (0.2355) (-1.7872)	-0.4631 (0.2181) (-2.1230)	-0.4729 (0.2300) (-2.0561)	-0.4896 (0.2161) (-2.2663)	-0.5010 (0.2281) (-2.1964)
HEC	0.0002 (0.0003) (0.6413)	0.0001 (0.0003) (0.4386)	0.0001 (0.0003) (0.3299)	0.0001 (0.0003) (0.2395)	0.0000 (0.0003) (0.1150)	0.0000 (0.0003) (0.0251)
EDU	0.0043 (0.0027) (1.5903)	0.0047 (0.0027) (1.7265)	0.0028 (0.0026) (1.1011)	0.0030 (0.0027) (1.0918)	0.0032 (0.0026) (1.2540)	0.0034 (0.0027) (1.2431)
DARS	0.3002 (0.1596) (1.8814)	0.4688 (0.2154) (2.1760)	0.2261 (0.1836) (3.0280)	0.5618 (0.1932) (2.9086)	0.7244 (0.2244) (3.2275)	0.7337 (0.2364) (3.1038)
DSHI		-0.2524 (0.2186) (-1.1543)			-0.2521 (0.1987) (-1.2687)	-0.2562 (0.2084) (-1.2294)
DMRS			0.2674 (0.1164) (2.2971)	0.2372 (0.1724) (1.3759)	0.2673 (0.1148) (2.3294)	0.2340 (0.1702) (1.3753)
DMRS1				0.0061 (0.1739) (0.0349)		0.0056 (0.1716) (0.0624)
DMRS2				0.0507 (0.1531) (0.3314)		0.0565 (0.1511) (0.3739)
R-squared	0.4156	0.4505	0.5330	0.5370	0.5678	0.5729
Adjusted R-squared	0.3359	0.3458	0.4440	0.3908	0.4597	0.4068
S.E. of regression	0.2365	0.2348	0.2164	0.2266	0.2134	0.2236
Ak. Info criterion	0.0952	0.1106	-0.0520	0.0932	-0.0525	0.0895
Sample size	26	26	26	26	26	26

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Bulgaria were excluded from the "full" samples.

Table 1b: Regression results[1] on the level of responsiveness [2] Log [1–IR]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-0.1246 (0.4224) (-0.2950)	-0.0801 (0.4152) (-0.1929)	-0.1051 (0.3862) (-0.2721)	-0.0555 (0.4108) (-0.1350)	-0.0611 (0.3761) (-0.1624)	-0.0092 (0.4004) (-0.0230)
HEC	-0.0107 (0.0260) (-0.4115)	-0.0097 (0.0255) (-0.3820)	0.0097 (0.0253) (0.3820)	0.0140 (0.0273) (0.5115)	0.0105 (0.0246) (0.4285)	0.0150 (0.0265) (0.5646)
EDU	-0.1204 (0.1050) (-1.1468)	-0.1313 (0.1032) (-1.2728)	-0.1176 (0.0960) (-1.2251)	-0.1320 (0.1001) (-3.4119)	-0.1284 (0.0935) (-1.3740)	-0.1435 (0.1001) (-1.4334)
DARS	-0.1830 (0.0760) (-2.4087)	-0.2734 (0.0991) (-2.7580)	-0.3333 (0.0952) (-3.4999)	-0.3417 (0.1001) (-3.4119)	-0.4221 (0.1096) (-3.8512)	-0.4313 (0.1151) (3.7480)
DSHI		0.1501 (0.1087) (1.3810)			0.1486 (0.0985) (1.5087)	0.1496 (0.1026) (1.4587)
DMRS			-0.1429 (0.0620) (-2.3070)	-0.1280 (0.0886) (-1.4447)	-0.1423 (0.0602) (-2.3658)	-0.1264 (0.0861) (-1.4684)
DMRS1				0.0060 (0.0885) (0.0682)		0.0056 (0.0860) (0.0646)
DMRS2				-0.0339 (0.0785) (-0.4315)		-0.0355 (0.0763) (-0.4657)
R-squared	0.4257	0.4735	0.5418	0.5509	0.5886	0.5984
Adjusted R-squared	0.3474	0.3732	0.4546	0.4091	0.4858	0.4422
S.E. of regression	0.1212	0.1187	0.1108	0.1153	0.1075	0.1120
Ak. Info criterion	-1.2427	-1.2528	-1.3917	-1.2579	-1.4226	-1.2927
Sample size	26	26	26	26	26	26

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Bulgaria were excluded from the "full" samples.

Table 2a: Regression results[1] on the distribution of responsiveness of health systems [2] (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	2.1440 (0.2524) (8.4928)	2.1440 (0.2469) (8.6829)	1.6327 (0.4617) (3.5367)	1.6327 (0.4663) (3.5018)	1.6327 (0.4507) (3.6228)	1.6327 (0.4547) (3.5908)
DARS	2.9117 (0.5313) (5.4807)	3.7145 (0.7408) (5.0144)	3.4229 (0.6529) (5.2428)	3.4229 (0.6594) (5.1910)	4.2257 (0.8228) (5.1355)	4.2257 (0.8302) (5.0901)
DSHI		-1.4049 (0.9239) (-1.5206)			-1.4049 (0.9107) (-1.5427)	-1.4049 (0.9188) (-1.5290)
DMRS			0.7217 (0.5485) (1.3158)	0.0493 (0.8513) (0.0580)	0.7217 (0.5355) (1.3478)	0.0493 (0.8302) (0.0594)
DMRS1				1.0846 (0.9009) (1.2040)		1.0846 (0.8786) (1.2346)
DMRS2				0.6675 (0.8224) (0.8116)		0.6675 (0.8020) (0.8323)
R-squared	0.5088	0.5463	0.5374	0.5618	0.5749	0.5993
Adjusted R-squared	0.4919	0.5139	0.5044	0.4944	0.5276	0.5192
S.E. of regression	1.2367	1.2097	1.2214	1.2336	1.1924	1.2030
Ak. Info criterion	3.3252	3.3103	3.3297	3.4044	3.3097	3.3796
Sample size	31	31	31	31	31	31

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Chile and Poland were excluded from the "full" samples.

Table 2b: Regression results[1] on the distribution of responsiveness of health systems [2] Log [1—IRD]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-2.2917 (0.2409) (-9.5135)	-2.2917 (0.2347) (-9.7639)	-1.8309 (0.4420) (-4.14259	-1.8309 (0.4476) (-4.0906)	-1.8309 (0.4298) (-4.2594)	-1.8309 (0.4349) (-4.2103)
DARS	-2.7774 (0.5069) (-5.4790)	-3.5783 (0.7041) (-5.0819)	-3.2382 (0.6251) (-5.1806)	-3.2382 (0.6330) (-5.1157)	-4.0390 (0.7848) (-5.1467)	-4.0390 (0.7939) (-5.0872)
DSHI		1.4015 (0.8782) (1.5959)			1.4015 (0.8686) (1.6135)	1.4015 (0.8787) (1.5949)
DMRS			-0.6505 (0.5252) (-1.2387)	-0.0531 (0.8172) (-0.0650)	-0.6505 (0.5107) (-1.2736)	-0.0531 (0.7939) (-0.0669)
DMRS1				-0.9857 (0.8648) (-1.1398)		-0.9857 (0.8402) (-1.1731)
DMRS2				-0.5807 (0.7895) (-0.7356)		-0.5807 (0.7670) (-0.7571)
R-squared	0.5086	0.5496	0.5342	0.5564	0.5751	0.5974
Adjusted R-squared	0.4917	0.5174	0.5009	0.4881	0.5279	0.5168
S.E. of regression	1.1801	1.1498	1.1694	1.1842	1.1373	1.1505
Ak. Info criterion	3.2314	3.2089	3.2426	3.3227	3.2150	3.2903
Sample size	31	31	31	31	31	31

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Chile and Poland were excluded from the "full" samples.

Table 3a: Regression results[1] on the equality of child survival[2] (Logit)

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	0.7248 (0.1171) (6.1898)	0.7248 (0.1183) (6.1263)	0.2798 (0.2092) (1.3375)	0.2798 (0.2038) (1.3729)	0.2798 (0.2115) (1.3234)	0.2798 (0.2061) (1.3579)
DARS	6.1819 (0.3740) (16.5298)	6.1819 (0.8111) (7.6215)	6.6269 (0.3970) (16.6922)	6.6269 (0.3868) (17.1343)	6.6269 (0.7912) (8.3759)	6.6269 (0.7711) (8.5937)
DSHI		0.0000 (0.8972) (0.0000)			0.0000 (0.8524) (0.0000)	0.0000 (0.8308) (0.0000)
DMRS			0.6203 (0.2470) (2.5108)	1.0737 (0.4202) (2.5550)	0.6203 (0.2497) (2.4845)	1.0737 (0.4249) (2.5271)
DMRS1				-0.1079 (0.4607) (-0.2343)		-0.1079 (0.4658) (-0.2318)
DMRS2				-0.6458 (0.3995) (-1.6165)		-0.6458 (0.4039) (-1.5989)
R-squared	0.8479	0.8479	0.8656	0.8778	0.8656	0.8778
Adjusted R-squared	0.8448	0.8416	0.8600	0.8671	0.8570	0.8642
S.E. of regression	0.7942	0.8024	0.7544	0.7350	0.7624	0.7431
Ak. Info criterion	2.4155	2.4547	2.3313	2.3149	2.3705	2.3541
Sample size	51	51	51	51	51	51

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Uzbekistan were excluded from the "restricted" samples.

Table 3b: Regression results[1] on the equality of child survival[2] Log [1—IECS]

Explanatory variables	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6
Constant	-1.1863 (0.0829) (-14.3162)	-1.1863 (0.0837) (-14.1693)	-0.8758 (0.1483) (-5.9043)	-0.8758 (0.1453) (-6.0269)	-0.8758 (0.1499) (-5.8425)	-0.8758 (0.1469) (-5.9610)
DARS	-5.7215 (0.2646) (-21.6201)	-5.7215 (0.5740) (-9.9685)	-6.0320 (0.2814) (-21.4327)	-6.0320 (0.2757) (-21.8778)	-6.0320 (0.5609) (-10.7546)	-6.0320 (0.5497) (-10.9728)
DSHI		0.0000 (0.6348) (0.0000)			0.0000 (0.6043) (0.0000)	0.0000 (0.5922) (0.0000)
DMRS			-0.4328 (0.1751) (-2.4712)	-0.7339 (0.2996) (-2.4500)	-0.4328 (0.1770) (-2.4453)	-0.7339 (0.3029) (-2.4232)
DMRS1				0.0694 (0.3284) (0.2114)		0.0694 (0.3320) (0.2091)
DMRS2				0.4297 (0.2848) (1.5087)		0.4297 (0.2879) (1.4922)
R-squared	0.9051	0.9051	0.9158	0.9226	0.9158	0.9226
Adjusted R-squared	0.9032	0.9012	0.9123	0.9159	0.9105	0.9140
S.E. of regression	0.5620	0.5678	0.5348	0.5239	0.5405	0.5297
Ak. Info criterion	1.7238	1.7630	1.6432	1.6380	1.6824	1.6772
Sample size	51	51	51	51	51	51

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Uzbekistan were excluded from the “restricted” samples.

APPENDIX F

Regression Results for Enlarged Models

Table 1: Selected regression results[1] for enlarged models (with GINI index as explanatory variable in the equation for distributional measures)

	IFFC		IRD		IECS	
Explanatory Variables	Logit specification	Log[(1—IFFC)]	Logit specification	Log[(1—IRD)]	Logit specification	Log[(1—IECS)]
Constant	2.8260 (1.3698) (2.0630)	-2.8794 (1.2155) (-2.3689)	3.061 (0.7956) (3.8539)	-3.1853 (0.7334) (-4.3432)	-0.7471 (0.9164) (-0.8153)	-0.1186 (0.7754) (-0.1530)
GINI	-0.0119 (0.0296) (-0.4020)	0.0097 (0.0262) (0.3696)	-0.0375 (0.0180) (-2.0853)	0.0352 (0.0166) (2.1287)	0.0355 (0.0206) (1.7240)	-0.0258 (0.0174) (-1.4803)
DARS	-0.2568 (0.7162) (-0.3586)	0.2669 (0.6355) (0.4200)	2.1713 (0.5222) (4.1577)	-2.0025 (0.4814) (-4.1597)	5.3537 (0.5531) (9.6789)	-4.9042 (0.4680) (-10.4788)
DMRS			0.9873 (0.4637) (2.1291)	-0.8994 (0.4275) (-2.1039)		
R-squared	0.0121	0.0130	0.5191	0.5229	0.7053	0.7397
Adjusted R-squared	-0.1114	-0.1103	0.4590	0.4632	0.6906	0.7267
S.E. of regression	1.1067	0.9821	0.9320	0.8592	1.1912	1.0079
Ak. Info criterion	3.1846	2.9456	2.8286	2.6659	3.2550	2.9208
Sample size	19	19	28	28	43	43

The first and second coefficient in brackets refer to the standard error and t-statistic, respectively

Table 2 : Selected regression results[1] for enlarged models (with the interaction term DARS*[PHE%-0.5] as explanatory variable)

Explanatory Variables	DALE
	Log[(80—DALE)]
Constant	4.9446 (0.3306) (14.9580)
HEC	-0.1897 (0.0196) (-9.6837)
EDU	-0.2166 (0.0828) (-2.6155)
DARS	-0.2088 (0.0843) (-2.4774)
DARS*[PHE%-0.5]	-0.4556 (0.2798) (-1.6284)
R-squared	0.7920
Adjusted R-squared	0.7850
S.E. of regression	0.2621
Ak. Info criterion	0.1990
Sample size	124

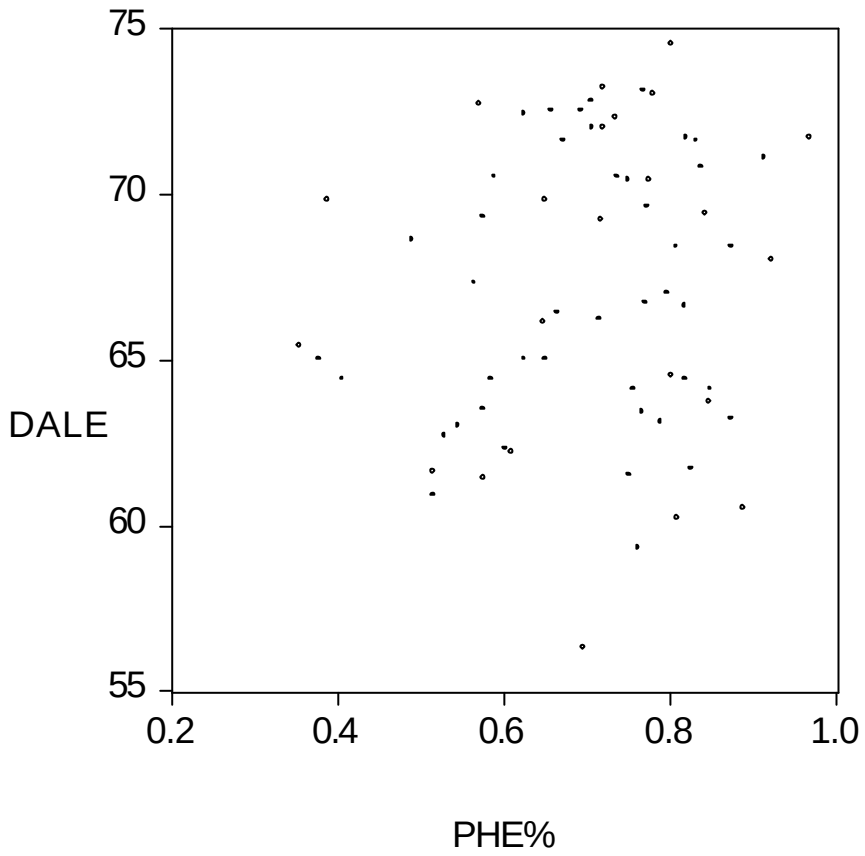
1 The first and second coefficient in brackets refer to the standard error and t-statistic, respectively

2 .

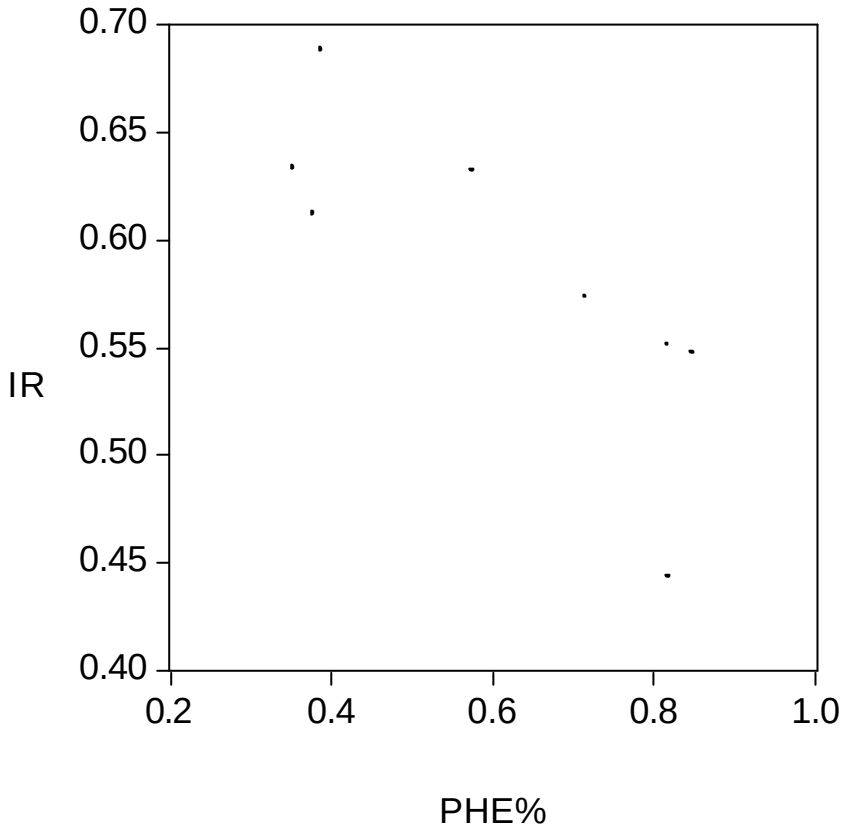
APPENDIX G

Graphs of Health Attainment Indicators
vs. Share of Public Health Expenditure to Total Health Expenditure

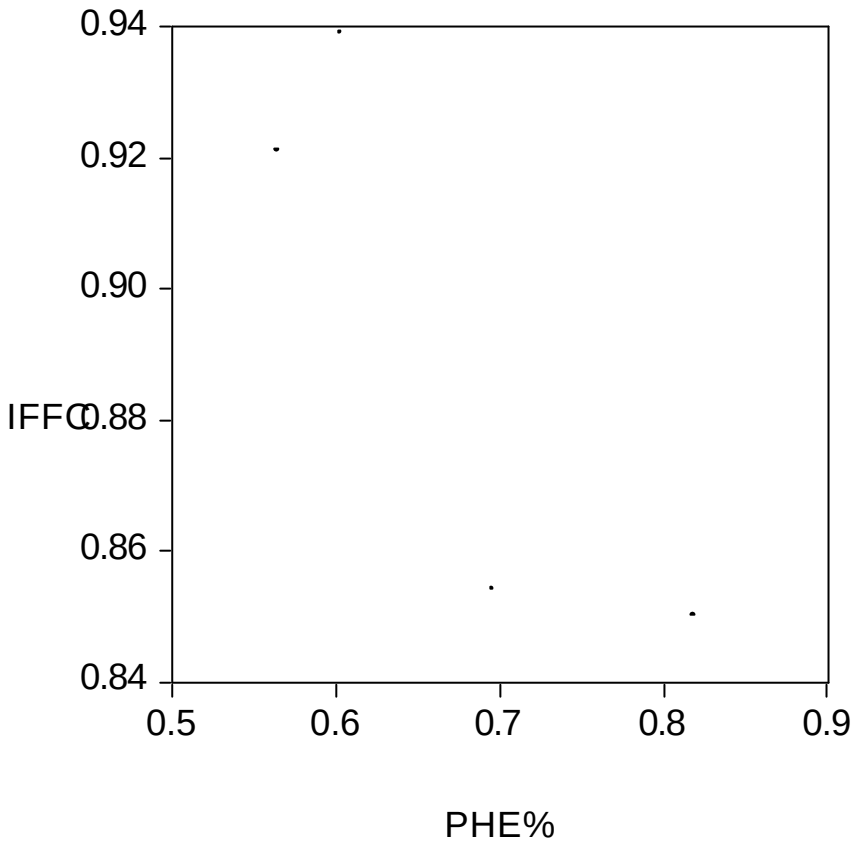
Graph 1a: Disability-Adjusted Life Expectancy (DALE) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=1; restricted samples)



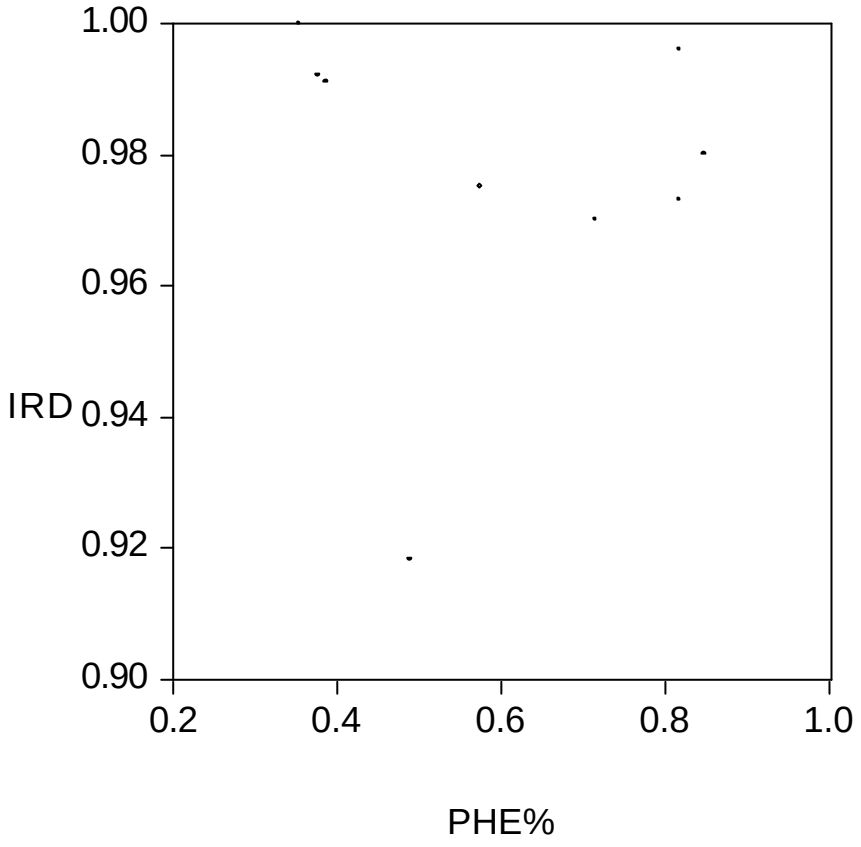
Graph 2a: Index of level of reponsiveness (IR) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=1)



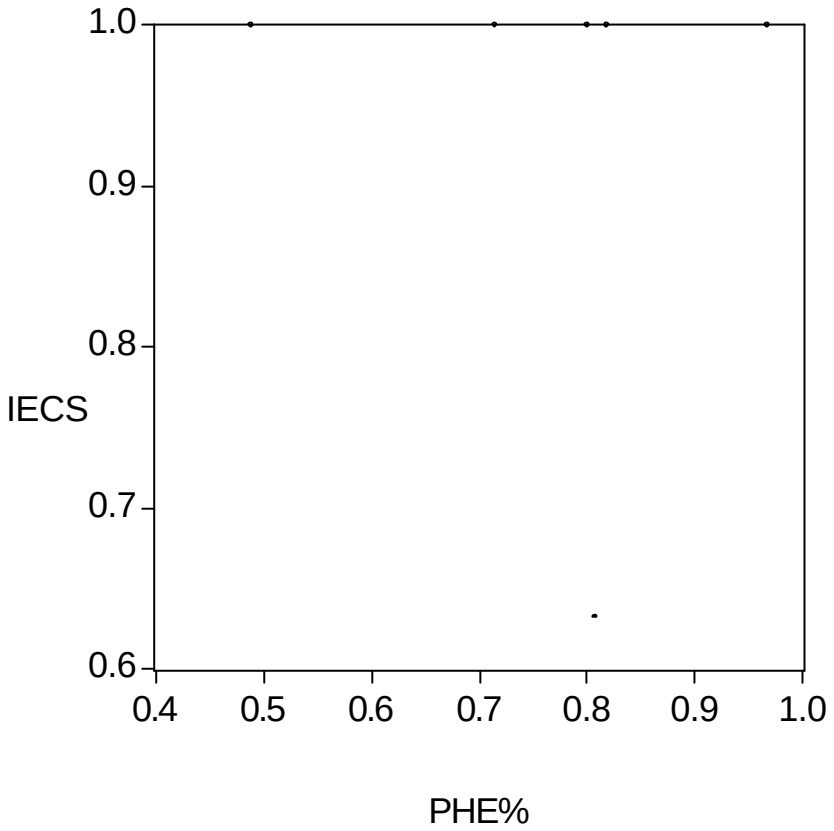
Graph 3a: Index of fairness of financial contribution (IFFC) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=1; restricted samples)



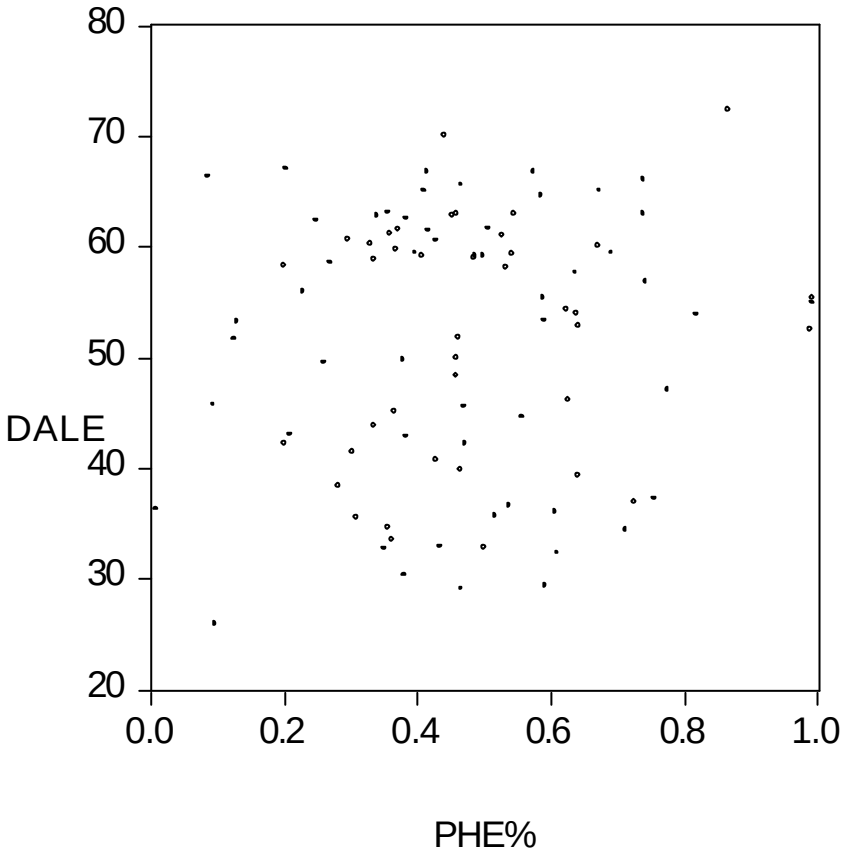
Graph 4a: Index of distribution of reponsiveness (IRD) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=1)



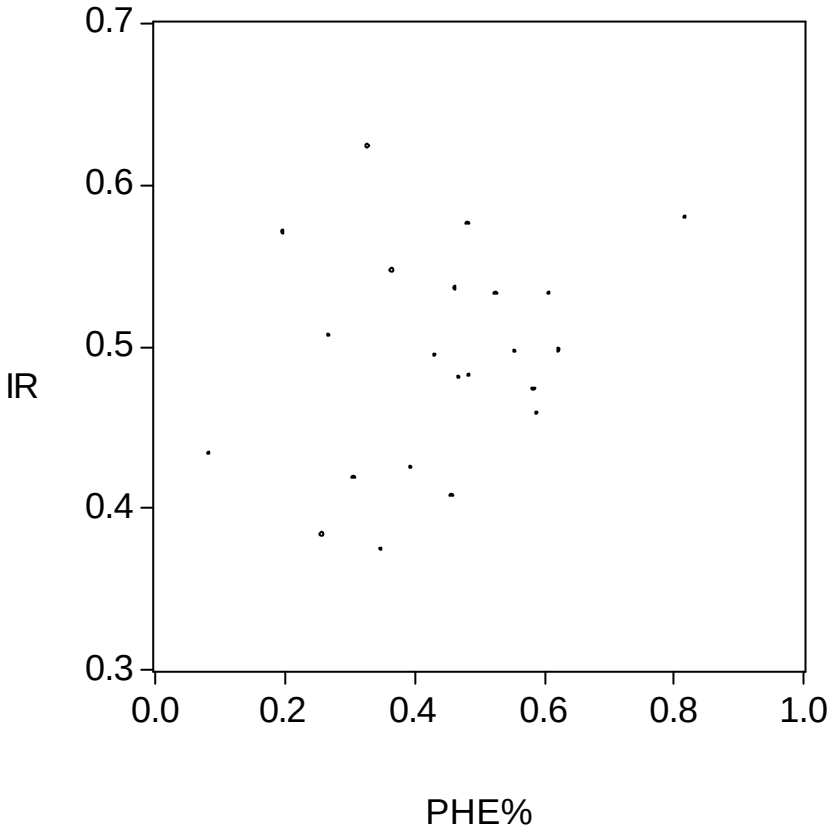
Graph 5a: Index of equality of child survival (IECS) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=1; restricted samples)



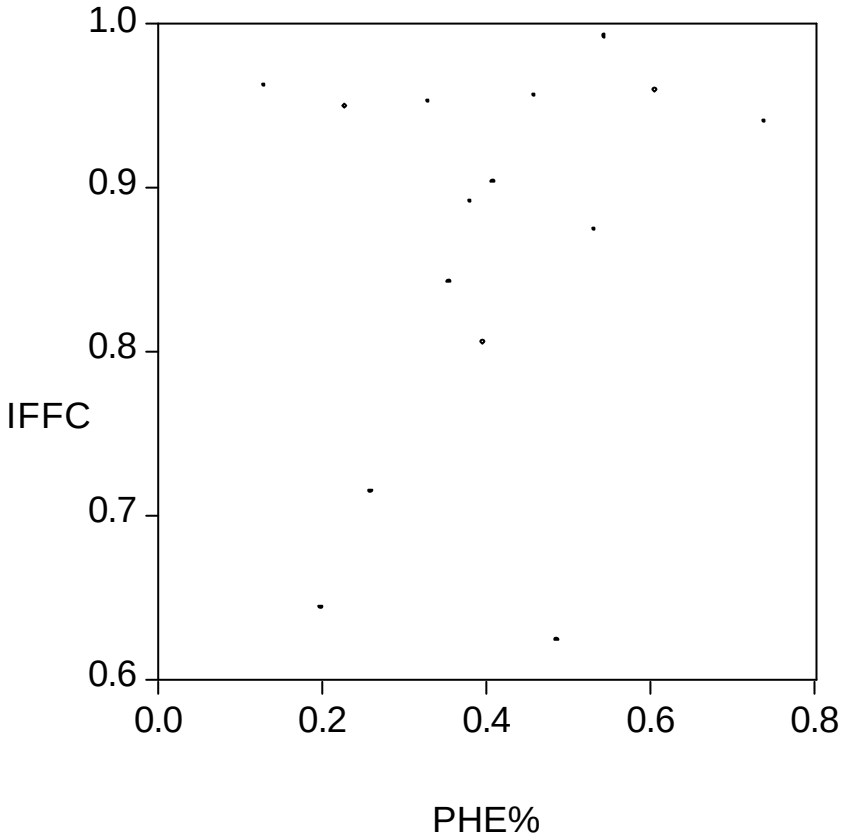
Graph 1b: Disability-Adjusted Life Expectancy (DALE) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=0; restricted samples)



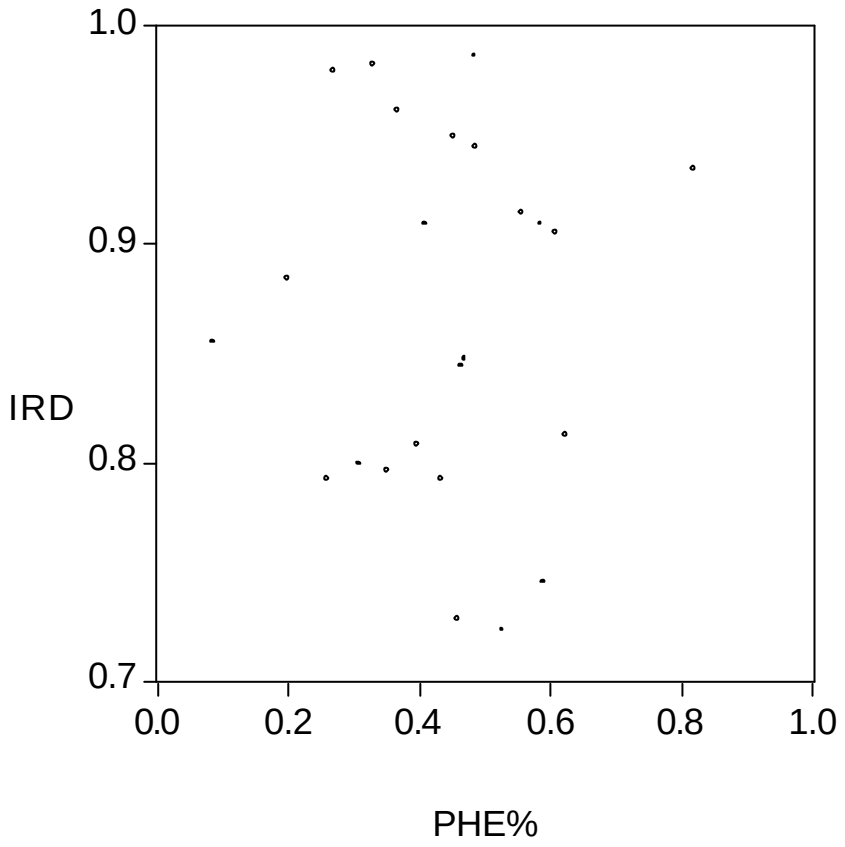
Graph 2b: Index of level of reponsiveness (IR) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=0)



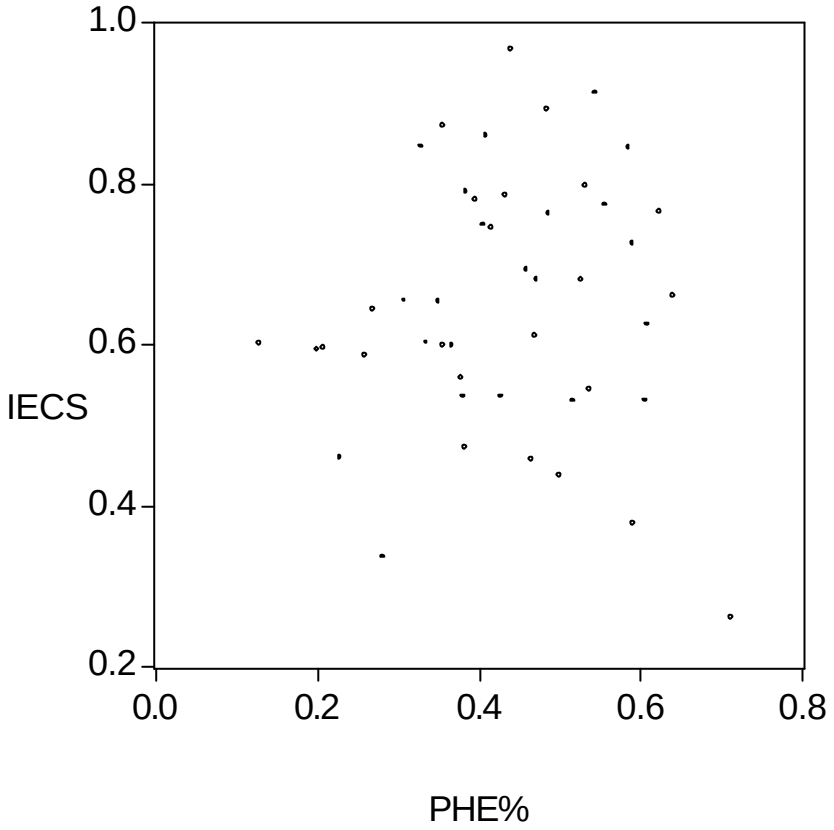
Graph 3b: Index of fairness of financial contribution (IFFC) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=0; restricted samples)



Graph 4b: Index of distribution of reponsiveness (IRD) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=0)



Graph 5b: Index of equality of child survival (IECS) vs. share of public health expenditure in total health expenditure (PHE%) (DARS=0; restricted samples)



APPENDIX H

Selected Regression Results
with “Respect for Persons” and “Client Orientation” as Dependent Variables

Table 1: Selected regression results[1] on the level of "Respect for Persons" and "Client Orientation"

Explanatory Variables	Respect for Persons		Client Orientation	
	Regression 1 Logit specification	Regression 2 Log[(1—RESPECT)]	Regression 1 Logit specification	Regression 2 Log[(1—CO)]
Constant	-0.4603 (0.2358) (-1.9518)	-0.0237 (0.4048) (-0.0586)	-0.6571 (0.2639) (-2.4900)	-0.1014 (0.4792) (-0.2116)
HEC	-0.0001 (0.0003) (-0.1799)	0.0165 (0.0252) (0.6540)	0.0006 (0.0003) (2.0721)	-0.0305 (0.0298) (-1.0235)
EDU	0.0034 (0.0028) (1.2224)	-0.1456 (0.0999) (-1.4571)	0.0035 (0.0031) (1.1075)	-0.0778 (0.1183) (-0.6577)
DARS	0.6065 (0.2399) (2.5281)	-0.3473 (0.1166) (-2.9793)	0.4088 (0.2002) (2.0422)	-0.4024 (0.1380) (-2.9161)
DSHI	-0.3540 (0.2109) (-1.6785)	0.1950 (0.1018) (1.9150)		0.2193 (0.1206) (1.8189)
DMRS	0.2541 (0.1251) (2.0380)	-0.1417 (0.0646) (-2.1937)	0.2521 (0.1406) (1.7923)	-0.1103 (0.0765 (-1.4429)
R-squared	0.3892	0.4136	0.5352	0.5420
Adjusted R-squared	0.2437	0.2740	0.4507	0.4330
S.E. of regression	0.2329	0.1162	0.2619	0.1376
Ak. Info criterion	0.1167	-1.2732	0.3239	-0.9355
Sample size	27	27	27	27

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

Table 2: Selected regression results[1] on the level of "Respect for Persons" and "Client Orientation" [2]

Explanatory Variables	Respect for Persons		Client Orientation	
	Regression 1 Logit specification	Regression 2 Log[(1—RESPECT)]	Regression 1 Logit specification	Regression 2 Log[(1—CO)]
Constant	-0.4606 (0.2240) (-2.0564)	0.0473 (0.3799) (0.1244)	-0.6695 (0.2455) (-2.7271)	-0.0175 (0.4500) (-0.0388)
HEC	-0.0002 (0.0003) (-0.8055)	0.0326 (0.0249) (1.3114)	0.0004 (0.0003) (1.1915)	-0.0114 (0.0294) (-0.3885)
EDU	0.0035 (0.0027) (1.3104)	-0.1732 (0.0944) (-1.8347)	0.0037 (0.0029) (1.2757)	-0.1104 (0.1118) (-0.9876)
DARS	0.6921 (0.2327) (2.9747)	-0.3869 (0.1107) (-3.4951)	0.5979 (0.2067) (2.8927)	-0.4493 (0.1311) (-3.4270)
DSHI	-0.2670 (0.2060) (-1.2963)	0.1367 (0.0995) (1.3742)		0.1504 (0.1178) (1.2763)
DMRS	0.2663 (0.1190) 2.2384)	-0.1556 (0.0608) (-2.5608)	0.2680 (0.1310) (2.0458)	-0.1268 (0.0720) (-1.7617)
R-squared	0.4539	0.4919	0.6066	0.6094
Adjusted R-squared	0.3174	0.3648	0.5317	0.5117
S.E. of regression	0.2212	0.1086	0.2436	0.1287
Ak. Info criterion	0.0194	-1.4026	0.1843	-1.0642
Sample size	26	26	26	26

[1] The first and second coefficient in brackets refer to the standard error and t-statistic, respectively.

[2] The data for Bulgaria were excluded from the "full" samples.

APPENDIX I

The Data

Table 1: Data on DALE and explanatory variables

Countries	DALE[1]	HEC[2]	EDU[3]	DARS	DSHI	DMRS	DMRS1	DMRS2
Afghanistan	37.70	2.000000	NA	0	0	0	0	0
Albania	60.00	26.00000	NA	1	0	0	0	0
Algeria	61.60	44.00000	96.00	0	0	1	1	0
Andorra	72.30	1368.000	NA	0	0	1	1	0
Angola	38.00	NA	34.70	0	0	0	0	0
Antigua-Barbuda	65.80	775.0000	NA	1	0	0	0	0
Argentina	66.70	676.0000	99.90	0	0	1	1	0
Armenia	66.70	36.00000	NA	0	0	0	0	0
Australia	73.20	1730.000	99.90	1	1	0	0	0
Austria	71.60	2277.000	99.90	1	1	0	0	0
Azerbaijan	63.70	20.00000	NA	1	0	0	0	0
Bahamas	59.10	785.0000	94.60	0	0	0	0	0
Bahrain	64.40	478.0000	98.20	1	0	0	0	0
Bangladesh	49.90	13.00000	75.10	0	0	0	0	0
Barbados	65.00	596.0000	97.40	1	0	0	0	0
Belarus	61.70	78.00000	NA	1	0	0	0	0
Belgium	71.60	1918.000	99.90	1	1	0	0	0
Belize	60.90	176.0000	99.90	1	0	0	0	0
Benin	42.20	12.00000	67.60	0	0	0	0	0
Bhutan	51.80	14.00000	13.20	0	0	0	0	0
Bolivia	53.30	59.00000	97.40	0	0	1	1	0
Bosnia and Herzegovina	64.90	77.00000	NA	1	0	0	0	0
Botswana	32.30	132.0000	80.10	0	0	1	0	1
Brazil	59.10	319.0000	97.10	0	0	1	0	1
Brunei Darussalam	64.40	NA	87.90	1	0	0	0	0
Bulgaria	64.40	59.00000	97.90	1	1	0	0	0
Burkina Faso	35.50	8.000000	32.30	0	0	1	0	1
Burundi	34.60	6.000000	35.60	0	0	1	0	1
Cambodia	45.70	21.00000	99.90	0	0	0	0	0

[1] Source: WHO (2000), Statistical Annex Table 5

[2] Source: WHO (2000), Statistical Annex Table 8

[3] Source: UNDP (2000)

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2
Cameroon	42.20	31.00000	61.70	0	0	1	0	1
Canada	72.00	1783.000	99.90	1	0	0	0	0
Cape Verde	57.60	34.00000	99.90	0	0	1	1	0
Central African R.	36.00	8.000000	46.20	0	0	0	0	0
Chad	39.40	7.000000	47.90	0	0	0	0	0
Chile	68.60	315.0000	90.40	1	1	0	0	0
China	62.30	20.00000	99.90	0	0	1	0	1
Colombia	62.90	247.0000	89.40	0	0	1	0	0
Comoros	46.80	14.00000	50.10	0	0	0	0	0
Congo	45.10	58.00000	78.30	0	0	1	1	0
Cook Islands	63.40	389.0000	NA	1	0	0	0	0
Costa Rica	66.70	226.0000	91.80	1	1	0	0	0
Côte d'Ivoire	42.80	23.00000	58.30	0	0	1	0	1
Croatia	67.00	352.0000	99.90	1	1	0	0	0
Cuba	68.40	131.0000	99.90	1	0	0	0	0
Cyprus	69.80	648.0000	NA	1	0	0	0	0
Czech Republic	68.00	391.0000	99.90	1	1	0	0	0
Democratic R. of Congo	36.30	NA	58.2	0	0	0	0	0
Democratic R. of Korea	52.30	37.00000	NA	1	0	0	0	0
Denmark	69.40	2574.000	99.90	1	0	0	0	0
Djibouti	37.90	23.00000	31.90	0	0	0	0	0
Dominica	69.80	282.0000	NA	1	0	0	0	0
Dominican Republic	62.50	91.00000	91.30	0	0	1	0	1
Ecuador	61.00	75.00000	99.90	0	0	1	0	0
Egypt	58.50	44.00000	95.20	0	0	1	1	0
El Salvador	61.50	182.0000	89.10	0	0	1	0	0
Equatorial Guinea	44.10	40.00000	79.30	0	0	1	0	0
Eritrea	37.70	6.000000	29.30	0	0	0	0	0
Estonia	63.10	204.0000	99.90	1	1	0	0	0
Ethiopia	33.50	4.000000	35.20	0	0	0	0	0
Fiji	59.40	115.0000	99.90	0	0	0	0	0
Finland	70.50	1789.000	99.90	1	0	0	0	0
	73.10	2369.000	99.90	1	1	0	0	0
	47.80	138.000	NA	0	0	1	1	0

France Gabon								

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2

Gambia	48.30	12.00000	65.90	0	0	0	0	0
Georgia	66.30	45.00000	89.00	0	0	0	0	0
Germany	70.40	2713.000	99.90	1	1	0	0	0
Ghana	45.50	11.00000	43.40	0	0	0	0	0
Greece	72.50	905.0000	99.90	1	1	0	0	0
Grenada	65.50	305.0000	NA	0	0	0	0	0
Guatemala	54.30	41.00000	73.80	0	0	1	0	1
Guinea	37.80	19.00000	45.60	0	0	1	1	0
Guinea-Bissau	37.20	13.00000	52.30	0	0	1	0	1
Guyana	60.20	45.00000	92.80	0	0	0	0	0
Haiti	43.80	18.00000	19.40	0	0	1	0	1
Honduras	61.10	59.00000	87.50	0	0	1	1	0
Hungary	64.10	236.0000	97.50	1	1	0	0	0
Iceland	70.80	2149.000	99.90	1	0	0	0	0
India	53.20	23.00000	77.20	0	0	1	0	1
Indonesia	59.70	18.00000	99.20	0	0	1	0	1
Iran	60.50	108.0000	90.00	0	0	1	0	1
Iraq	55.30	251.0000	74.60	0	0	1	0	1
Ireland	69.60	1326.000	99.90	1	0	0	0	0
Israel	70.40	1385.000	NA	1	1	0	0	0
Italy	72.70	1855.000	99.90	1	0	0	0	0
Jamaica	67.30	149.0000	95.60	1	0	0	0	0
Japan	74.50	2373.000	99.90	1	1	0	0	0
Jordan	60.00	59.00000	NA	0	0	1	0	1
Kazakhstan	56.40	62.00000	NA	1	0	0	0	0
Kenya	39.30	17.00000	65.00	0	0	1	0	1
Kiribati	55.30	122.0000	NA	0	0	0	0	0
Kuwait	63.20	572.0000	65.20	1	0	0	0	0
Kyrgyzstan	56.30	15.00000	99.50	1	0	0	0	0

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2
Lao People's Dem. Rep..	46.10	13.00000	73.00	0	0	0	0	0
Latvia	62.20	140.0000	99.90	1	1	0	0	0
Lebanon	60.60	461.0000	76.10	0	0	1	1	0
Lesotho	36.90	28.00000	68.60	0	0	1	0	1
Liberia	34.00	31.00000	NA	0	0	0	0	0
Libya	59.30	296.0000	99.90	0	0	1	0	0
Lithuania	64.10	167.0000	NA	1	1	0	0	0
Luxembourg	71.10	2580.000	NA	1	1	0	0	0
Madagascar	36.60	5.000000	58.70	0	0	1	0	1
Malawi	29.40	15.00000	98.50	0	0	0	0	0
Malaysia	61.40	110.0000	99.90	1	0	0	0	0
Maldives	53.90	107.0000	NA	0	0	0	0	0
Mali	33.10	10.00000	38.10	0	0	1	1	0
Malta	70.50	551.0000	99.90	1	0	0	0	0
Marshall Islands	56.80	253.0000	NA	0	0	0	0	0
Mauritania	41.40	24.00000	62.90	0	0	1	0	1
Mauritius	62.70	129.0000	96.50	1	0	0	0	0
Mexico	65.00	240.0000	99.90	0	0	1	1	0
Micronesia	59.60	242.0000	NA	0	0	0	0	0
Monaco	72.40	1264.000	NA	1	1	0	0	0
Mongolia	53.80	16.00000	85.10	0	0	1	0	0
Morocco	59.10	66.00000	76.60	0	0	1	0	1
Mozambique	34.40	5.000000	39.60	0	0	1	0	1
Myanmar	51.60	100.0000	99.30	0	0	1	0	1
Namibia	35.60	153.0000	91.40	0	0	1	1	0
Nauru	52.50	593.0000	NA	0	0	0	0	0
Nepal	49.50	8.000000	78.40	0	0	0	0	0

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2
Netherlands	72.00	2041.000	99.90	1	1	0	0	0
New Zealand	69.20	1416.000	99.90	1	0	0	0	0
Nicaragua	58.10	35.00000	78.60	0	0	1	0	1
Niger	29.10	5.000000	24.40	0	0	1	0	1
Nigeria	38.30	30.00000	NA	0	0	0	0	0
Niue	61.60	91.00000	NA	1	0	0	0	0
Norway	71.70	2283.000	99.90	1	1	0	0	0
Oman	63.00	370.0000	67.70	1	0	0	0	0
Pakistan	55.90	17.00000	NA	0	0	1	0	1
Palau	59.00	552.0000	NA	1	0	0	0	0
Panama	66.00	238.0000	89.90	0	0	1	1	0
Papua New Guinea	47.00	36.00000	78.90	0	0	0	0	0
Paraguay	63.00	106.0000	96.30	0	0	1	1	0
Peru	59.40	149.0000	93.80	0	0	1	0	0
Philippines	58.90	40.00000	99.90	0	0	1	1	0
Poland	66.20	229.0000	99.40	1	1	0	0	0
Portugal	69.30	845.0000	99.90	1	0	0	0	0
Qatar	63.50	1042.000	83.30	1	0	0	0	0
Republic of Korea	65.00	700.0000	99.90	1	1	0	0	0
Republic of Moldova	61.50	35.00000	NA	1	0	0	0	0
Romania	62.30	59.00000	99.90	1	1	0	0	0
Russia	61.30	158.0000	99.90	1	0	0	0	0
Rwanda	32.80	13.00000	78.30	0	0	0	0	0
Saint Kitts and Nevis	61.60	404.0000	NA	1	0	0	0	0
Saint Lucia	65.00	211.0000	NA	1	0	0	0	0
Saint Vincent and the G.	66.40	211.0000	NA	1	0	0	0	0
Samoa	60.50	47.00000	96.50	1	0	0	0	0
San Marino	72.30	2257.000	NA	1	1	0	0	0

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2
Sao Tome and Principe	53.50	13.00000	NA	0	0	0	0	0
Saudi Arabia	64.50	260.0000	60.10	1	0	0	0	0
Senegal	44.60	23.00000	59.50	0	0	1	1	0
Seychelles	59.30	424.0000	NA	1	0	0	0	0
Sierra Leone	25.90	11.00000	44.00	0	0	0	0	0
Singapore	69.30	876.0000	91.40	1	0	0	0	0
Slovakia	66.60	311.0000	NA	1	1	0	0	0
Slovenia	68.40	857.0000	NA	1	1	0	0	0
Solomon Islands	54.90	19.00000	NA	0	0	0	0	0
Somalia	36.40	11.00000	NA	0	0	0	0	0
South Africa	39.80	268.0000	99.90	0	0	1	0	1
Spain	72.80	1071.000	99.90	1	0	0	0	0
Sri Lanka	62.80	25.00000	99.90	0	0	0	0	0
Sudan	43.00	13.00000	NA	0	0	0	0	0
Suriname	62.70	114.0000	99.90	0	0	0	0	0
Swaziland	38.10	49.00000	94.6	0	0	0	0	0
Sweden	73.00	2456.000	99.90	1	0	0	0	0
Switzerland	72.50	3564.000	99.90	1	1	0	0	0
Syrian Arab Republic	58.80	151.0000	94.7	0	0	0	0	0
Tajikistan	57.30	11.00000	NA	1	0	0	0	0
Thailand	60.20	133.0000	88.00	0	0	1	0	1
The F. Y. of Macedonia	63.70	120.0000	NA	1	1	0	0	0
Togo	40.70	9.000000	82.30	0	0	0	0	0
Tonga	62.90	141.0000	NA	0	0	0	0	0
Trinidad and Tobago	64.60	197.0000	99.90	0	0	1	0	1
Tunisia	61.40	111.0000	99.90	0	0	1	0	0
Turkey	62.90	118.0000	99.90	0	0	1	1	0
Turkmenistan	54.30	24.00000	NA	1	0	0	0	0

Table 1 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	DSHI	DMRS	DMRS1	DMRS2
Tuvalu	57.40	813.0000	NA	0	0	0	0	0
Uganda	32.70	14.00000	NA	0	0	0	0	0
Ukraine	63.00	54.00000	NA	1	0	0	0	0
United Arab Emirates	65.40	900.0000	82.00	1	0	0	0	0
United Kingdom	71.70	1303.000	99.90	1	0	0	0	0
United R. of Tanzania	36.00	12.00000	47.40	0	0	0	0	0
United States of America	70.00	4187.000	99.9	0	0	1	0	1
Uruguay	67.00	660.0000	94.30	0	0	1	0	0
Uzbekistan	60.20	24.00000	NA	1	0	0	0	0
Vanuatu	52.80	47.00000	71.30	0	0	0	0	0
Venezuela	65.00	150.0000	82.50	0	0	1	1	0
Viet Nam	58.20	17.00000	99.90	0	0	1	0	1
Yemen	49.70	12.00000	NA	0	0	1	0	1
Yugoslavia	66.10	127.0000	NA	1	1	0	0	0
Zambia	30.30	27.00000	72.40	0	0	0	0	0
Zimbabwe	32.90	46.00000	93.1	0	0	0	0	0

Table 2: Data on IR and explanatory variables

Countries	IR[1]	HEC[2]	EDU[3]	DARS	DSHI	DMRS	DMRS1	DMRS2
Bangladesh	0.4070	13.00000	75.10	0	0	0	0	0
Bolivia	0.4580	59.00000	97.40	0	0	1	1	0
Botswana	0.5320	132.000	80.10	0	0	1	0	1
Brazil	0.4810	319.000	97.10	0	0	1	0	1
Bulgaria	0.4430	59.0000	97.90	1	1	0	0	0
Burkina Faso	0.4180	8.00000	32.30	0	0	1	0	1
Cyprus	0.6880	648.000	NA	1	0	0	0	0
Ecuador	0.5320	75.0000	99.90	0	0	1	0	0
Egypt	0.5060	44.0000	95.20	0	0	1	1	0
Georgia	0.4330	45.0000	89.00	0	0	0	0	0
Ghana	0.4800	11.0000	43.40	0	0	0	0	0
Guatemala	0.4970	41.0000	73.80	0	0	1	0	1
Hungary	0.5470	236.000	97.50	1	1	0	0	0
Indonesia	0.5460	18.0000	99.20	0	0	1	0	1
Malaysia	0.6320	110.000	99.90	1	0	0	0	0
Mongolia	0.5790	16.0000	85.10	0	0	1	0	0
Nepal	0.3830	8.00000	78.40	0	0	0	0	0
Peru	0.4240	149.000	93.80	0	0	1	0	0
Philippines	0.5750	40.0000	99.90	0	0	1	1	0
Poland	0.5730	229.000	99.40	1	1	0	0	0
Republic of Korea	0.6120	700.000	99.90	1	1	0	0	0
Senegal	0.4960	23.0000	59.50	0	0	1	1	0
Slovakia	0.5510	311.000	NA	1	1	0	0	0
South Africa	0.5350	268.000	99.90	0	0	1	0	1
Thailand	0.6230	133.000	88.00	0	0	1	0	1
Trinidad and Tobago	0.4730	197.000	99.90	0	0	1	0	1
Uganda	0.3740	14.0000	NA	0	0	0	0	0
United Arab Emirates	0.6330	900.000	82.00	1	0	0	0	0
Viet Nam	0.5700	17.0000	99.90	0	0	1	0	1
Zimbabwe	0.4940	46.0000	93.10	0	0	0	0	0

[1] Source: WHO (2000), Statistical Annex Table 6

[2] Source: WHO (2000), Statistical Annex Table 8

[3] Source: UNDP (2000)

Table 3: Data on IFFC and explanatory variables

countries	IFFC[1]	DARS	DSHI	DMRS	DMRS1	DMRS2
Bangladesh	0.9560	0	0	0	0	0
Brazil	0.6230	0	0	1	0	1
Bulgaria	0.8500	1	1	0	0	0
Colombia	0.9920	0	0	1	0	0
Guyana	0.9610	0	0	0	0	0
India	0.9620	0	0	1	0	1
Jamaica	0.9210	1	0	0	0	0
Kyrgyzstan	0.8540	1	0	0	0	0
Mexico	0.9030	0	0	1	1	0
Nepal	0.7140	0	0	0	0	0
Nicaragua	0.8740	0	0	1	0	1
Pakistan	0.9490	0	0	1	0	1
Panama	0.9400	0	0	1	1	0
Paraguay	0.8420	0	0	1	1	0
Peru	0.8050	0	0	1	0	0
Romania	0.9390	1	1	0	0	0
Russia	0.8020	1	0	0	0	0
Thailand	0.9520	0	0	1	0	1
United R. of Tanzania	0.9590	0	0	0	0	0
Viet Nam	0.6430	0	0	1	0	1
Zambia	0.8910	0	0	0	0	0

[1] Source: WHO (2000), Statistical Annex Table 7

Table 4: Data on IRD and explanatory variables

Countries	IRD[1]	DARS	DSHI	DMRS	DMRS1	DMRS2
Bangladesh	0.7280	0	0	0	0	0
Bolivia	0.7450	0	0	1	1	0
Botswana	0.9050	0	0	1	0	1
Brazil	0.9440	0	0	1	0	1
Bulgaria	0.9960	1	1	0	0	0
Burkina Faso	0.7990	0	0	1	0	1
Chile	0.9180	1	1	0	0	0
Cyprus	0.9910	1	0	0	0	0
Ecuador	0.7230	0	0	1	0	0
Egypt	0.9790	0	0	1	1	0
Georgia	0.8550	0	0	0	0	0
Ghana	0.8470	0	0	0	0	0
Guatemala	0.8120	0	0	1	0	1
Hungary	0.9800	1	1	0	0	0
Indonesia	0.9610	0	0	1	0	1
Malaysia	0.9750	1	0	0	0	0
Mexico	0.9090	0	0	1	1	0
Mongolia	0.9340	0	0	1	0	0
Nepal	0.7920	0	0	0	0	0
Peru	0.8080	0	0	1	0	0
Philippines	0.9860	0	0	1	1	0
Poland	0.9700	1	1	0	0	0
Republic of Korea	0.9920	1	1	0	0	0
Senegal	0.9140	0	0	1	1	0
Slovakia	0.9730	1	1	0	0	0
South Africa	0.8440	0	0	1	0	1
Thailand	0.9490	0	0	0	0	0
Sri Lanka	0.9820	0	0	1	0	1
Trinidad and Tobago	0.9090	0	0	1	0	1
Uganda	0.7960	0	0	0	0	0
United Arab	0.9999	1	0	0	0	0
Emirates	0.8840	0	0	1	0	1
Viet Nam	0.7920	0	0	0	0	0
Zimbabwe						

[1] Source: WHO (2000), Statistical Annex table 6

Table 5: Data on IECS and explanatory variables

countries	IECS[1]	DARS	DSHI	DMRS	DMRS1	DMRS2
Bangladesh	0.6920	0	0	0	0	0
Benin	0.6800	0	0	0	0	0
Bolivia	0.7250	0	0	1	1	0
Botswana	0.6240	0	0	1	0	1
Brazil	0.7620	0	0	1	0	1
Burkina Faso	0.6540	0	0	1	0	1
Burundi	0.5990	0	0	1	0	1
Cameroon	0.5930	0	0	1	0	1
Central African Republic	0.3010	0	0	0	0	0
Chile	0.9990	1	1	0	0	0
Colombia	0.9120	0	0	1	0	0
Comoros	0.6330	0	0	0	0	0
Côte d'Ivoire	0.4720	0	0	1	0	1
Dominican Republic	0.7890	0	0	1	0	1
Ecuador	0.6790	0	0	1	0	0
Egypt	0.6430	0	0	1	1	0
Ghana	0.6100	0	0	0	0	0
Guatemala	0.7640	0	0	1	0	1
Haiti	0.6020	0	0	1	0	1
India	0.6010	0	0	1	0	1
Indonesia	0.5990	0	0	1	0	1
Japan	0.9990	1	1	0	0	0
Kazakhstan	0.8800	1	0	0	0	0
Kenya	0.6600	0	0	1	0	1
Liberia	0.2450	0	0	0	0	0
Madagascar	0.5440	0	0	1	0	1
Malawi	0.3780	0	0	0	0	0
Mali	0.4890	0	0	1	1	0
Mexico	0.8580	0	0	1	1	0
Morocco	0.748	0	0	1	0	1
Mozambique	0.2610	0	0	1	0	1
Namibia	0.5290	0	0	1	1	0
Nepal	0.5860	0	0	0	0	0
Nicaragua	0.7960	0	0	1	0	1
Niger	0.4570	0	0	1	0	1
Nigeria	0.3360	0	0	0	0	0
Norway	0.9990	1	1	0	0	0
Pakistan	0.4600	0	0	1	0	1
Paraguay	0.8710	0	0	1	1	0
Peru	0.7790	0	0	1	0	0
Philippines	0.8920	0	0	1	1	0
Poland	0.9990	1	1	0	0	0
Rwanda	0.4370	0	0	0	0	0
Senegal	0.7730	0	0	1	1	0
Somalia	0.4950	0	0	0	0	0
Sudan	0.5950	0	0	0	0	0
Thailand	0.8450	0	0	1	0	1
Togo	0.5350	0	0	0	0	0
Trinidad and Tobago	0.8440	0	0	1	0	1
Tunisia	0.7440	0	0	1	0	0
Uganda	0.6530	0	0	0	0	0
United Kingdom	0.9990	1	0	0	0	0
United Republic of Tanzania	0.5300	0	0	0	0	0

[1] Source: WHO (2000), Statistical Annex Table 5

United States of America	0.9660	0	0	1	0	1
Uzbekistan	0.6320	1	0	0	0	0
Yemen	0.5580	0	0	1	0	1
Zambia	0.5350	0	0	0	0	0
Zimbabwe	0.7850	0	0	0	0	0

Table 6: Data on IFFC and explanatory variables for enlarged model (with GINI as explanatory variable)

Countries	IHFC[1]	DARS	GINI[2]
Bangladesh	0.9560	0	33.60
Brazil	0.6230	0	60.00
Bulgaria	0.8500	1	28.30
Colombia	0.9920	0	57.10
Guyana	0.9610	0	NA
India	0.9620	0	37.80
Jamaica	0.9210	1	36.40
Kyrgyzstan	0.8540	1	40.50
Mexico	0.9030	0	53.70
Nepal	0.7140	0	36.70
Nicaragua	0.8740	0	50.30
Pakistan	0.9490	0	31.20
Panama	0.9400	0	48.50
Paraguay	0.8420	0	59.10
Peru	0.8050	0	46.20
Romania	0.9390	1	28.20
Russia	0.8020	1	48.70
Thailand	0.9520	0	41.40
United R. of Tanzania	0.9590	0	38.20
Viet Nam	0.6430	0	36.10
Zambia	0.8910	0	49.80

[1] Source: WHO (2000), Statistical Annex Table 8

[2] Source: World Bank (2000 / 2001), Annex Table 5

Table 7: Data on IRD and explanatory variables for enlarged model (with GINI as explanatory variable)

Countries	IRD[1]	DARS	DMRS	GINI[2]
Bangladesh	0.7280	0	0	33.60
Bolivia	0.7450	0	1	42.00
Botswana	0.9050	0	1	NA
Brazil	0.9440	0	1	60.00
Bulgaria	0.9960	1	0	28.30
Burkina Faso	0.7990	0	1	48.20
Chile	0.9180	1	0	56.50
Cyprus	0.9910	1	0	NA
Ecuador	0.7230	0	1	43.70
Egypt	0.9790	0	1	28.90
Georgia	0.8550	0	0	NA
Ghana	0.8470	0	0	32.70
Guatemala	0.8120	0	1	59.60
Hungary	0.9800	1	0	30.80
Indonesia	0.9610	0	1	36.50
Malaysia	0.9750	1	0	48.50
Mexico	0.9090	0	1	53.70
Mongolia	0.9340	0	1	33.20
Nepal	0.7920	0	0	36.70
Peru	0.8080	0	1	46.20
Philippines	0.9860	0	1	46.20
Poland	0.9700	1	0	32.90
Republic of Korea	0.9920	1	0	31.60
Senegal	0.9140	0	1	41.30
Slovakia	0.9730	1	0	19.50
South Africa	0.8440	0	1	59.30
Thailand	0.9490	0	0	34.40
Sri Lanka	0.9820	0	1	41.40
Trinidad and Tobago	0.9090	0	1	NA
Uganda	0.7960	0	0	39.20
United Arab	0.9999	1	0	NA
Emirates	0.8840	0	1	36.10
Viet Nam	0.7920	0	0	56.80
Zimbabwe				

[1] Source: WHO (2000), Statistical Annex table 6

[2] Source: World Bank (2000 / 2001), Annex Table 5

Table 8: Data on IECS and explanatory variables for enlarged model (with GINI as explanatory variable)

countries	IECS[1]	DARS	GINI[2]
Bangladesh	0.6920	0	33.60
Benin	0.6800	0	NA
Bolivia	0.7250	0	42.00
Botswana	0.6240	0	NA
Brazil	0.7620	0	60.00
Burkina Faso	0.6540	0	48.20
Burundi	0.5990	0	33.30
Cameroon	0.5930	0	NA
Central African Republic	0.3010	0	61.30
Chile	0.9990	1	56.50
Colombia	0.9120	0	57.10
Comoros	0.6330	0	NA
Côte d'Ivoire	0.4720	0	36.70
Dominican Republic	0.7890	0	48.70
Ecuador	0.6790	0	43.70
Egypt	0.6430	0	28.90
Ghana	0.6100	0	32.70
Guatemala	0.7640	0	59.60
Haiti	0.6020	0	NA
India	0.6010	0	37.80
Indonesia	0.5990	0	36.50
Japan	0.9990	1	24.90
Kazakhstan	0.8800	1	35.40
Kenya	0.6600	0	44.50
Liberia	0.2450	0	NA
Madagascar	0.5440	0	46.00
Malawi	0.3780	0	NA
Mali	0.4890	0	50.50
Mexico	0.8580	0	53.70
Morocco	0.748	0	39.50
Mozambique	0.2610	0	39.60
Namibia	0.5290	0	NA
Nepal	0.5860	0	36.70
Nicaragua	0.7960	0	50.30
Niger	0.4570	0	50.50
Nigeria	0.3360	0	50.60
Norway	0.9990	1	25.80
Pakistan	0.4600	0	31.20
Paraguay	0.8710	0	59.10
Peru	0.7790	0	46.20
Philippines	0.8920	0	46.20
Poland	0.9990	1	32.90
Rwanda	0.4370	0	28.90
Senegal	0.7730	0	41.30
Somalia	0.4950	0	NA
Sudan	0.5950	0	NA
Thailand	0.8450	0	41.40
Togo	0.5350	0	NA
Trinidad and Tobago	0.8440	0	NA
Tunisia	0.7440	0	40.20
Uganda	0.6530	0	39.20
United Kingdom	0.9990	1	36.10
United Republic of Tanzania	0.5300	0	38.20
United States of America	0.9660	0	40.80
Uzbekistan	0.6320	1	33.30

[1] Source: WHO (2000), Statistical Annex Table 5

[2] Source: World Bank (2000 / 2001), Annex Table 5

Yemen	0.5580	0	39.50
Zambia	0.5350	0	49.80
Zimbabwe	0.7850	0	56.80

Table 9: Data on DALE and explanatory variables

Countries	DALE[1]	HEC[2]	EDU[3]	DARS	PHE%[2]
Afghanistan	37.70	2.000000	NA	0	0.406000
Albania	60.00	26.00000	NA	1	0.777000
Algeria	61.60	44.00000	96.00	0	0.508000
Andorra	72.30	1368.000	NA	0	0.867000
Angola	38.00	NA	34.70	0	0.596000
Antigua-Barbuda	65.80	775.0000	NA	1	0.573000
Argentina	66.70	676.0000	99.90	0	0.575000
Armenia	66.70	36.00000	NA	0	0.415000
Australia	73.20	1730.000	99.90	1	0.720000
Austria	71.60	2277.000	99.90	1	0.673000
Azerbaijan	63.70	20.00000	NA	1	0.793000
Bahamas	59.10	785.0000	94.60	0	0.499000
Bahrain	64.40	478.0000	98.20	1	0.585000
Bangladesh	49.90	13.00000	75.10	0	0.460000
Barbados	65.00	596.0000	97.40	1	0.625000
Belarus	61.70	78.00000	NA	1	0.826000
Belgium	71.60	1918.000	99.90	1	0.832000
Belize	60.90	176.0000	99.90	1	0.516000
Benin	42.20	12.00000	67.60	0	0.472000
Bhutan	51.80	14.00000	13.20	0	0.462000
Bolivia	53.30	59.00000	97.40	0	0.591000
Bosnia and Herzegovina	64.90	77.00000	NA	1	0.926000
Botswana	32.30	132.0000	80.10	0	0.610000
Brazil	59.10	319.0000	97.10	0	0.487000
Brunei Darussalam	64.40	NA	87.90	1	0.406000
Bulgaria	64.40	59.00000	97.90	1	0.819000
Burkina Faso	35.50	8.000000	32.30	0	0.309000
Burundi	34.60	6.000000	35.60	0	0.356000
Cambodia	45.70	21.00000	99.90	0	0.094000
Cameroon	42.20	31.00000	61.70	0	0.201000
Canada	72.00	1783.000	99.90	1	0.720000
Cape Verde	57.60	34.00000	99.90	0	0.638000
Central African R.	36.00	8.000000	46.20	0	0.689000
Chad	39.40	7.000000	47.90	0	0.793000
Chile	68.60	315.0000	90.40	1	0.490000
China	62.30	20.00000	99.90	0	0.249000
Colombia	62.90	247.0000	89.40	0	0.545000
Comoros	46.80	14.00000	50.10	0	0.682000
Congo	45.10	58.00000	78.30	0	0.366000
Cook Islands	63.40	389.0000	NA	1	0.767000
Costa Rica	66.70	226.0000	91.80	1	0.771000
Côte d'Ivoire	42.80	23.00000	58.30	0	0.384000
Croatia	67.00	352.0000	99.90	1	0.797000
Cuba	68.40	131.0000	99.90	1	0.875000
Cyprus	69.80	648.0000	NA	1	0.388000
Czech Republic	68.00	391.0000	99.90	1	0.923000
Democratic R. of Congo	36.30	NA	58.2	0	0.837000
Democratic R. of Korea	52.30	37.00000	NA	1	0.009000
	69.40	2574.000	99.90	1	0.843000
	37.90	23.00000	31.90	0	0.729000
	69.80	282.0000	NA	1	0.650000

[1] Source: WHO (2000), Statistical Annex Table 5

[2] Source: WHO (2000), Statistical Annex Table 8

[3] Source: UNDP (2000)

Denmark	62.50	91.00000	91.30	0	0.385000
Djibouti	61.00	75.00000	99.90	0	0.528000
Dominica	58.50	44.00000	95.20	0	0.270000
Dominican Republic	61.50	182.0000	89.10	0	0.372000
Ecuador	44.10	40.00000	79.30	0	0.572000
Egypt	37.70	6.000000	29.30	0	0.557000
El Salvador	63.10	204.0000	99.90	1	0.789000
Equatorial Guinea					
Eritrea					
Estonia					

Table 9 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	PHE%
Ethiopia	33.50	4.000000	35.20	0	0.362000
Fiji	59.40	115.0000	99.90	0	0.692000
Finland	70.50	1789.000	99.90	1	0.737000
France	73.10	2369.000	99.90	1	0.769000
Gabon	47.80	138.0000	NA	0	0.665000
Gambia	48.30	12.00000	65.90	0	0.459000
Georgia	66.30	45.00000	89.00	0	0.086000
Germany	70.40	2713.000	99.90	1	0.775000
Ghana	45.50	11.00000	43.40	0	0.470000
Greece	72.50	905.0000	99.90	1	0.658000
Grenada	65.50	305.0000	NA	0	0.466000
Guatemala	54.30	41.00000	73.80	0	0.625000
Guinea	37.80	19.00000	45.60	0	0.572000
Guinea-Bissau	37.20	13.00000	52.30	0	0.756000
Guyana	60.20	45.00000	92.80	0	0.791000
Haiti	43.80	18.00000	19.40	0	0.336000
Honduras	61.10	59.00000	87.50	0	0.360000
Hungary	64.10	236.0000	97.50	1	0.849000
Iceland	70.80	2149.000	99.90	1	0.838000
India	53.20	23.00000	77.20	0	0.130000
Indonesia	59.70	18.00000	99.20	0	0.368000
Iran	60.50	108.0000	90.00	0	0.428000
Iraq	55.30	251.0000	74.60	0	0.589000
Ireland	69.60	1326.000	99.90	1	0.773000
Israel	70.40	1385.000	NA	1	0.750000
Italy	72.70	1855.000	99.90	1	0.571000
Jamaica	67.30	149.0000	95.60	1	0.565000
Japan	74.50	2373.000	99.90	1	0.802000
Jordan	60.00	59.00000	NA	0	0.672000
Kazakhstan	56.40	62.00000	NA	1	0.636000
Kenya	39.30	17.00000	65.00	0	0.641000
Kiribati	55.30	122.0000	NA	0	0.993000
Kuwait	63.20	572.0000	65.20	1	0.874000
Kyrgyzstan	56.30	15.00000	99.50	1	0.696000
Lao People’s Dem. Rep.	46.10	13.00000	73.00	0	0.627000
Latvia	62.20	140.0000	99.90	1	0.610000
Lebanon	60.60	461.0000	76.10	0	0.296000
Lesotho	36.90	28.00000	68.60	0	0.726000
Liberia	34.00	31.00000	NA	0	0.667000
Libya	59.30	296.0000	99.90	0	0.542000
Lithuania	64.10	167.0000	NA	1	0.757000
Luxembourg	71.10	2580.000	NA	1	0.914000
Madagascar	36.60	5.000000	58.70	0	0.538000
Malawi	29.40	15.00000	98.50	0	0.592000
Malaysia	61.40	110.0000	99.90	1	0.576000
Maldives	53.90	107.0000	NA	0	0.639000
Mali	33.10	10.00000	38.10	0	0.458000
Malta	70.50	551.0000	99.90	1	0.589000
Marshall Islands	56.80	253.0000	NA	0	0.743000
Mauritania	41.40	24.00000	62.90	0	0.303000
Mauritius	62.70	129.0000	96.50	1	0.529000
	65.00	240.0000	99.90	0	0.410000
	59.60	242.0000	NA	0	0.923000
	72.40	1264.000	NA	1	0.625000
	53.80	16.00000	85.10	0	0.820000
	59.10	66.00000	76.60	0	0.407000
	34.40	5.000000	39.60	0	0.713000

Mexico	51.60	100.0000	99.30	0	0.126000
Micronesia	35.60	153.0000	91.40	0	0.517000
Monaco	52.50	593.0000	NA	0	0.990000
Mongolia	49.50	8.000000	78.40	0	0.260000
Morocco					
Mozambique					
Myanmar					
Namibia					
Nauru					
Nepal					

Table 9 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	PHE%
Netherlands	72.00	2041.000	99.90	1	0.707000
New Zealand	69.20	1416.000	99.90	1	0.717000
Nicaragua	58.10	35.00000	78.60	0	0.533000
Niger	29.10	5.000000	24.40	0	0.466000
Nigeria	38.30	30.00000	NA	0	0.282000
Niue	61.60	91.00000	NA	1	0.876000
Norway	71.70	2283.000	99.90	1	0.820000
Oman	63.00	370.0000	67.70	1	0.545000
Pakistan	55.90	17.00000	NA	0	0.229000
Palau	59.00	552.0000	NA	1	0.900000
Panama	66.00	238.0000	89.90	0	0.740000
Papua New Guinea	47.00	36.00000	78.90	0	0.776000
Paraguay	63.00	106.0000	96.30	0	0.356000
Peru	59.40	149.0000	93.80	0	0.397000
Philippines	58.90	40.00000	99.90	0	0.485000
Poland	66.20	229.0000	99.40	1	0.716000
Portugal	69.30	845.0000	99.90	1	0.575000
Qatar	63.50	1042.000	83.30	1	0.575000
Republic of Korea	65.00	700.0000	99.90	1	0.378000
Republic of Moldova	61.50	35.00000	NA	1	0.751000
Romania	62.30	59.00000	99.90	1	0.603000
Russia	61.30	158.0000	99.90	1	0.768000
Rwanda	32.80	13.00000	78.30	0	0.501000
Saint Kitts and Nevis	61.60	404.0000	NA	1	0.515000
Saint Lucia	65.00	211.0000	NA	1	0.651000
Saint Vincent and the G.	66.40	211.0000	NA	1	0.665000
Samoa	60.50	47.00000	96.50	1	0.889000
San Marino	72.30	2257.000	NA	1	0.735000
Sao Tome and Principe	53.50	13.00000	NA	0	0.750000
Saudi Arabia	64.50	260.0000	60.10	1	0.802000
Senegal	44.60	23.00000	59.50	0	0.557000
Seychelles	59.30	424.0000	NA	1	0.762000
Sierra Leone	25.90	11.00000	44.00	0	0.097000
Singapore	69.30	876.0000	91.40	1	0.358000
Slovakia	66.60	311.0000	NA	1	0.818000
Slovenia	68.40	857.0000	NA	1	0.808000
Solomon Islands	54.90	19.00000	NA	0	0.993000
Somalia	36.40	11.00000	NA	0	0.714000
South Africa	39.80	268.0000	99.90	0	0.465000
Spain	72.80	1071.000	99.90	1	0.706000
Sri Lanka	62.80	25.00000	99.90	0	0.454000
Sudan	43.00	13.00000	NA	0	0.209000
Suriname	62.70	114.0000	99.90	0	0.340000
Swaziland	38.10	49.00000	94.6	0	0.723000
Sweden	73.00	2456.000	99.90	1	0.78000
Switzerland	72.50	3564.000	99.90	1	0.693000
Syrian Arab Republic	58.80	151.0000	94.7	0	0.336000
Tajikistan	57.30	11.00000	NA	1	0.878000
Thailand	60.20	133.0000	88.00	0	0.330000
The F. Y. of Macedonia	63.70	120.0000	NA	1	0.848000
Togo	40.70	9.000000	82.30	0	0.428000
Tonga	62.90	141.0000	NA	0	0.460000
Trinidad and Tobago	64.60	197.0000	99.90	0	0.586000
Tunisia	61.40	111.0000	99.90	0	0.417000
Turkey	62.90	118.0000	99.90	0	0.740000
Turkmenistan		24.00000	NA	1	0.860000

Table 9 (continued): Data on DALE and explanatory variables

Countries	DALE	HEC	EDU	DARS	PHE%
Tuvalu	57.40	813.0000	NA	0	0.915000
Uganda	32.70	14.00000	NA	0	0.351000
Ukraine	63.00	54.00000	NA	1	0.755000
United Arab Emirates	65.40	900.0000	82.00	1	0.354000
United Kingdom	71.70	1303.000	99.90	1	0.969000
United R. of Tanzania	36.00	12.00000	47.40	0	0.607000
United States of America	70.00	4187.000	99.9	0	0.441000
Uruguay	67.00	660.0000	94.30	0	0.203000
Uzbekistan	60.20	24.00000	NA	1	0.809000
Vanuatu	52.80	47.00000	71.30	0	0.643000
Venezuela	65.00	150.0000	82.50	0	0.674000
Viet Nam	58.20	17.00000	99.90	0	0.200000
Yemen	49.70	12.00000	NA	0	0.379000
Yugoslavia	66.10	127.0000	NA	1	0.648000
Zambia	30.30	27.00000	72.40	0	0.382000
Zimbabwe	32.90	46.00000	93.1	0	0.434000

Table 10: Data on RESPECT and explanatory variables

Countries	RESPECT [1]	HEC[2]	EDU[3]	DARS	DSHI	DMRS
Bangladesh	4.07940	13.00000	75.10	0	0	0
Bolivia	4.67300	59.00000	97.40	0	0	1
Botswana	5.34000	132.000	80.10	0	0	1
Brazil	4.85980	319.000	97.10	0	0	1
Bulgaria	4.49690	59.0000	97.90	1	1	0
Burkina Faso	4.22990	8.00000	32.30	0	0	1
Cyprus	6.71040	648.000	NA	1	0	0
Ecuador	5.36550	75.0000	99.90	0	0	1
Egypt	4.88720	44.0000	95.20	0	0	1
Georgia	4.71070	45.0000	89.00	0	0	0
Ghana	4.87820	11.0000	43.40	0	0	0
Guatemala	5.38930	41.0000	73.80	0	0	1
Hungary	5.40800	236.000	97.50	1	1	0
Indonesia	5.45550	18.0000	99.20	0	0	1
Malaysia	6.21670	110.000	99.90	1	0	0
Mongolia	5.88050	16.0000	85.10	0	0	1
Nepal	3.89460	8.00000	78.40	0	0	0
Peru	4.08240	149.000	93.80	0	0	1
Philippines	6.13080	40.0000	99.90	0	0	1
Poland	5.71600	229.000	99.40	1	1	0
Republic of Korea	5.51080	700.000	99.90	1	1	0
Senegal	5.11180	23.0000	59.50	0	0	1
Slovakia	5.31630	311.000	NA	1	1	0
South Africa	5.50670	268.000	99.90	0	0	1
Thailand	5.85100	133.000	88.00	0	0	1
Trinidad and Tobago	4.69610	197.000	99.90	0	0	1
Uganda	3.88280	14.0000	NA	0	0	0
United Arab Emirates	5.90460	900.000	82.00	1	0	0
Viet Nam	6.02800	17.0000	99.90	0	0	1
Zimbabwe	4.93550	46.0000	93.10	0	0	0

[1] Source: WHO / GPE / FAR data on sub-index responsiveness 'respect for persons' as used to establish the index of responsiveness (IR) for WHO (2000).

[2] Source: WHO (2000), Statistical Annex Table 8

[3] Source: UNDP (2000)

Table 11: Data on CO and explanatory variables

Countries	CO[1]	HEC[2]	EDU[3]	DARS	DSHI	DMRS
Bangladesh	3.80680	13.00000	75.10	0	0	0
Bolivia	4.28340	59.00000	97.40	0	0	1
Botswana	5.08950	132.000	80.10	0	0	1
Brazil	4.59850	319.000	97.10	0	0	1
Bulgaria	4.25350	59.0000	97.90	1	1	0
Burkina Faso	3.81010	8.00000	32.30	0	0	1
Cyprus	6.87150	648.000	NA	1	0	0
Ecuador	5.16410	75.0000	99.90	0	0	1
Egypt	5.06150	44.0000	95.20	0	0	1
Georgia	3.84230	45.0000	89.00	0	0	0
Ghana	4.46690	11.0000	43.40	0	0	0
Guatemala	4.34370	41.0000	73.80	0	0	1
Hungary	5.42740	236.000	97.50	1	1	0
Indonesia	5.37320	18.0000	99.20	0	0	1
Malaysia	6.31140	110.000	99.90	1	0	0
Mongolia	5.51120	16.0000	85.10	0	0	1
Nepal	3.54630	8.00000	78.40	0	0	0
Peru	4.21200	149.000	93.80	0	0	1
Philippines	5.12290	40.0000	99.90	0	0	1
Poland	5.44660	229.000	99.40	1	1	0
Republic of Korea	6.67550	700.000	99.90	1	1	0
Senegal	4.43520	23.0000	59.50	0	0	1
Slovakia	5.58860	311.000	NA	1	1	0
South Africa	5.00030	268.000	99.90	0	0	1
Thailand	6.47370	133.000	88.00	0	0	1
Trinidad and Tobago	4.59140	197.000	99.90	0	0	1
Uganda	3.26030	14.0000	NA	0	0	0
United Arab Emirates	6.54430	900.000	82.00	1	0	0
Viet Nam	5.27620	17.0000	99.90	0	0	1
Zimbabwe	4.68570	46.0000	93.10	0	0	0

[1] Source: WHO / GPE / FAR data on sub-index of responsiveness 'client orientation' as used to establish the index of responsiveness (IR) for WHO (2000).

[2] Source: WHO (2000), Statistical Annex Table 8

[3] Source: UNDP (2000)

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