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# Benchmarking Government Provision of Social Safety Nets

**Timothy Besley, Robin Burgess and Imran Rasul**

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Social Protection Unit
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# Benchmarking Government Provision of Social Safety Nets

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# Abstract

The question of how much governments should spend on social programs generally, or safety nets in particular, is of great obvious interest to policymakers but is extremely difficult to address empirically. The approach in this paper differs from others by assuming that what governments can potentially do in terms of spending on social programs is given by what governments across the world are actually observed to be doing on average.

After first briefly reviewing the existing methodologies, their limitations, and what can be learned, an analysis of 63 countries spending patterns from 1972-1997 is presented using a comparative benchmarking methodology. Unconditional rankings of spending on safety nets and other health and education social programs are refined by controlling for various factors which affect the ability to fund programs. Two sets of factors are examined: (i) structural features captured by regional dummy variables and characteristics of the underlying populations; and (ii) quality of government as reflected in measures of corruption, rule of law, political pressure, and others. Separate analyses are conducted across countries for selected welfare indicators such as the infant mortality rate and life expectancy at birth and for states in India, for which additional information is available on macroeconomic factors and institutional features influencing safety nets spending. The approach generates a picture as to how states are performing relative to international expenditure norms and may be useful to policymakers in determining the appropriate level of overall spending.

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# Benchmarking Government Provision of Social Safety Nets

*Timothy Besley, Robin Burgess, and Imran Rasul, Department of Economics, London School of Economics* [1]

## I. Introduction

The purpose of this paper is to provide some practical guidelines on how much governments should spend on social safety nets. There are a number of methods put forward in the current literature for addressing this question. The traditional public economics approach is based upon calculation of the costs and benefits of each safety net-related government activity. However, this type of analysis typically requires larger amounts of information than are typically available, even in countries with reliable household data. More complex approaches still would emphasize general equilibrium effects and behavioral responses.

Thus while these are the core textbook approaches, in practice it is not clear that they provide a practical approach in many instances. They may also be difficult for policymakers to understand, and this can create suspicion about their value.

We could imagine a more tractable approach that measures the objectives of government from an alternative, normative criterion which may be based upon various measures of needs—closing the poverty gap, or reducing variability of income to a given level, or some such thing. The drawback here is we usually don't have nearly that amount of money available—we might know how much it costs to provide plausibly delivered targeted transfers to the whole needy population, just as we might know how much it would cost to provide a basic package of health services to the whole population. This will inevitably lead to trade-offs between alternative uses of resources, and we still therefore require some means of choosing between them.

All of these methods suffer from two additional problems that we shall address in our methodology. First, they typically do not take account of how effective the government might be in meeting one need or another. For example, we can expect the quality of government to affect how efficient safety net resources are in targeting vulnerable groups rather than being used for rent seeking or other non-productive uses. Secondly, the ability to extrapolate from studies based on existing methodologies is limited. Thus, we are often unable to facilitate the comparison of countries to each other, and in particular of economies

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with similar income levels (and levels of institutional development). Such an analysis would not only be of use in and of itself, but in the context of a constructive policy dialogue with government officials. Telling policymakers how they perform relative to their economic neighbors may prove to be an effective means of providing the incentives to increase safety net expenditures by introducing a form of yardstick competition across economies.

In our approach, we do not assume that governments are optimizing in terms of their levels of spending on social safety nets. Instead, we relate spending on different types of safety nets to some benchmark level of performance. This is determined by what countries are able to do on average for a given set of structural and institutional features of the economy. This gives us an indication of whether particular countries are spending more or less than this international norm, and provides a concrete basis for discussing whether governments ought to be spending more or less on various types of safety net.

In fact, we are able to form three different benchmarks taking different factors into account. We first examine the share of gross domestic product (GDP) devoted to each type of safety net, and then rank countries according to this. We have enough variation in this data to suggest that policymakers cannot all be optimizing. We then try to account for this variation through certain structural characteristics of the economy, such as the level and distribution of income, the level of urbanization, etc. We then form a cross-country ranking where the benchmark is what countries are able to do on average, controlling for their structural characteristics. Finally, the third benchmark also takes into account the institutional features of the country, such as the levels of corruption, bureaucracy, and the rule of law. We can thus decompose the policy advice we can offer to governments into two forms—first, the effects of changes in the structural characteristics of the economy, and second, the effects of changing institutional features. We set out the benefits of altering both types of policy in terms of safety net spending, and what the resulting change would be in any given country's performance.

This approach is useful as it will generate a clear picture as to whether particular countries or states are over- or underperforming relative to international, regional, or national norms. In fact, our methodology allows us to present simple information to policymakers in the form of country rankings. This, in turn, enables us to make statements of the form "country *i* is spending less on safety nets than we would expect given its ability to finance such expenditures and the need for safety nets in the country, relative to the international norm." We can make similar statements that also take into account the institutional quality of the country. Furthermore, we can benchmark country *i's* performance relative to its neighbors, which may be perceived by policymakers to have similar structural features. This information, coupled with the arguments for investment in safety nets that are also outlined in the paper, can be used during dialogue with policymakers on the appropriate level of spending on safety nets.

Benchmarks of this type are useful as they can generate incentives to improve performance to conform with international and regional norms. Pressure to do this can come both from the international community and from the domestic dialogue which is generated by the publication of such information. This has often been the case in such areas as labor and environmental standards, and it seem sensible that this process of "yardstick competition" be extended to cover the case of social protection.

The value of this benchmarking exercise is contingent on data being reflective of government activities in the safety net area and being comparable across countries. On both these counts, available data sets are somewhat lacking. This does not detract from the validity of our methodology but rather points out that gathering more accurate and comparable data on what is actually being spent on safety nets should be a priority in terms of thinking about what the appropriate levels of spending should be.

The remainder of the paper is organized as follows. Section two begins by defining safety nets, and here we emphasize a functional or objectives-based definition, rather than working with program-based definitions of safety nets. We think of safety nets as playing both redistributive and risk-reducing roles in the economy. We then detail who ought to be the recipients of safety net expenditures, and the benefits to the poor and the non-poor that such expenditures confer, before giving examples of which types of program we may think of as forming part of a safety net. Section three discusses how the existing methodologies address the question of how much governments ought to spend on safety nets, the limitations of each approach, and what we may learn from them.

Section four then argues from first principles what determines the need for such programs, before providing the intuition behind our methodology and presentation of results. Section five formally presents our methodology of benchmarking country performance, both in terms of safety net expenditures, but also for welfare outcomes such as life expectancy and infant mortality rates. We do this both across countries and at the level of Indian states where one can more effectively control for common macroeconomic factors and institutional features. Section six then goes through each of these sets of results in turn.

Section seven frames our discussion in the context of a constructive policy dialogue. First, it presents a clear way to argue the case for safety net expenditures and to get policymakers to not only think of such programs in terms of the costs of provision, but also in terms of their benefits. Secondly, we summarize how the results may be used in such a dialogue, and what policy implications follow. We show how our rankings can be used to justify increased safety net expenditures or policy reforms, through yardstick competition.

## II. Safety Nets

### *What are Safety Nets and Who are They For?*

There is some debate over what constitutes a safety net. This is partly due to the fact that such programs have only existed for a half century, beginning in Western Europe and now gradually being implemented in some form in most developing economies.

Authors such as Atkinson (1995) and Subbarao (1997) argue that the purpose of safety nets is to alleviate chronic and transient poverty. They identify the mechanisms that help to mitigate these adverse outcomes as being either private safety nets, which are informally organized or community-based, and public interventions covering health, education, social insurance, and publicly-funded transfers such as food subsidies. Alternative views of safety nets are, for example, those of Barr (1994), where their role is seen in a broader social context, to not only increase consumption per capita, but also to have a redistributive function and create political stability. Holzmann and Jorgensen (1999) argue that public

interventions assist in better managing income risks, as well as contributing to social cohesion.

We define safety nets as those public interventions which are designed to serve two key functions: (i) to play a redistributive role transferring resources toward the poorer members of society to bring them out of poverty, and (ii) to provide greater opportunities for individuals to mitigate risks from unforeseen contingencies. Such risks can operate at the level of the household, say through an unexpected death or unemployment of the household head, but also at the community or national level due to natural disasters, financial crisis, and terms-of-trade deteriorations. The correct balance between the redistributive and risk-reduction roles of safety nets will ultimately depend upon country-specific factors.

Safety nets therefore do not only protect individuals from transient periods of poverty, say due to loss of employment, sudden illness, or natural disasters, but also serve to protect individuals from lifetime poverty that can arise from, say, lack of education and poor health, particularly in childhood. Hence, when considering how much governments should be spending on such programs, the long-run intertemporal, intergenerational, and wider social benefits should all be taken into account as well as considering the short-run alleviation of poverty.

In all countries, we observe three types of vulnerable individual. Different safety nets will be able to assist these different groups. First, there are the chronically poor whose income levels remains below an acceptable minimum, typically set through a poverty line. These individuals remain in such a state even during periods of economic growth and in the absence of microeconomic and macroeconomic shocks. The second vulnerable group consists of the temporarily poor whose income levels fluctuate above and below the poverty line in times of shocks. Thirdly, we also recognize the existence of those individuals who fall into poverty in phases of macroeconomic adjustment, for example, people who lost their jobs during the transition of Eastern European countries toward a market economy, e.g., due to privatization or the bankruptcy of government-owned enterprises.

However, although safety nets should be targeted toward each of these groups, it should not be thought that the non-poor do not benefit from such social expenditures. We will discuss how the non-poor also benefit from such programs in the next section.

### *The Benefits of Safety Nets*

Following on our definition of what types of social assistance constitute safety nets, we can now be clear about the exact benefits of such expenditures:

- Redistribution: safety nets aid in transferring resources to the poor, and thus in protecting them from poverty in both the short- and the long-run. It can be argued that this raises the welfare of both the poor and the non-poor if the society is averse to inequality. The programs can be targeted at the individual, household, or community level to raise the well-being of the poor to levels above the minimum standards that are accepted nationally and internationally. (Albania, for example, has a program of social assistance that operates through community-level institutions). Redistribution need not be at the expense of growth, and a growing

body of literature identifies cases where redistributive policies have led to growth enhancements (see Benabou 1996).

- Economic efficiency: this can then be improved through each of the following mechanisms:
  (i) We know that if the allocation of resources in a sector characterized by imperfect information, missing markets (especially in insurance), public goods, or externalities, is left to market forces, then the equilibrium allocation will be non-optimal due to these sources of market failure. Safety net expenditures often serve to correct these types of market failure (see Benabou 1996).
  (ii) The poor will not have to resort to using short-run coping strategies, such as selling their assets in times of crisis, and so will be left better off in the long-run.
  (iii) By becoming less vulnerable to income shocks, the poor will also be able to invest in their human and physical capital, namely they will be more willing to spend time and resources on education and machinery, for example.
  (iv) There will be reduced incentives for individuals to enter into marginalized economic activities such as working in the black economy or informal sectors, or engaging in criminal activities. This should not only save government resources in preventing such activities, but may generate higher tax revenues which can then be ploughed back into social assistance.
- Political economy: social assistance to the poor may empower them to engage in the policymaking process at both a local and national level. This may well reduce the probability of socially inefficient political decisions being made solely for the benefit of elites or certain special interest groups, or other types of political failure. The engagement of the poor in the policymaking process can have self-enforcing effects in that, if a government demonstrates a commitment to reducing poverty, incentives increase for political organizing by the poor—who, as we have argued, are a heterogeneous group. The poor are therefore in a better position to place policies designed specifically for themselves onto the political agenda. This may have the effect of raising support for the government in the long run.
- Social cohesion: safety nets can play an important role in providing for social cohesion in a number of ways:
  (i) At times of macroeconomic crisis or adjustment processes, hard economic decisions often have to be made. By raising social cohesion, safety nets may raise the political acceptability of market-based reforms that often need to be made in the aftermath of economic crisis to enable a country to reach a path of sustainable growth. They also demonstrate a government's commitment to social welfare issues. Venezuela, for example, introduced a package of 14 programs to accompany its policy of structural adjustment.
  (ii) If society is averse to having unequal opportunities available to individuals or income inequality per se, then safety nets can improve social cohesion.

Empirical support is growing for this view of safety nets as a form of social cohesion. For instance, Sala-i-Martin (1997), using cross-country data, shows that public transfers have a positive correlation with growth and may therefore also be a productive input into national output. The mechanism by which public transfers affect output is argued to be that of social cohesion—increased transfers reduce social unrest, which enhances the conditions for growth and more than offsets any negative effects of the distortionary taxation required to fund the

transfers in the first place. Rodrik (1998) provides cross-country evidence on the efficiency gains to be had from government provision of social services, and in particular their provision through effective government-level institutions. His empirical evidence appears to suggest that those economies with good institutional frameworks are most able to deal with external shocks in the long run. Economies with weak institutions tend to delay price and fiscal adjustments in response to shocks, thus diverting resources away from productive and entrepreneurial activities, and increasing uncertainty in the economic environment. In essence, high-quality institutions can be seen as one mechanism to deal with internal conflicts over resources when economies are hit by external shocks.

### *Types of Safety Net*

We can now be precise about the types of programs that make up safety nets. These can take the form of cash or income transfers, such as pensions, child allowances, unemployment benefits, or microfinance, or they can be transfers in kind of commodities such as food subsidies, housing subsidies, or energy subsidies. They may provide income indirectly by offering vulnerable groups employment in public works programs or more broadly, by providing services such as health and education. Given our earlier definition of safety net programs as interventions that are designed to play a redistributive role and to provide greater opportunities for individuals to mitigate risks from unforeseen contingencies, we focus narrowly on the following types of policies.

#### Cash Transfers

The two most common types of cash transfers are forms of social assistance, targeted to vulnerable groups in society such as the unemployed, children, the disabled, or pensioners, and forms of financial assistance to families. Often these are based upon the number of children living in the household.

The World Bank and others have carried out a number of studies of such programs including family allowances in Hungary, Russia and the Kyrgyz Republic; pensions in India; unemployment benefits in Jordan (the *National Assistance Fund*); the *Janasaviya Program* in Sri Lanka, which pays for two years of basic training for targeted household heads; and a Namibian scheme of transfers to children of AIDS-infected parents.

#### In-Kind Transfers

These can involve transfers of commodities, such as rice or kerosene. The advantage of such transfers is that they are less susceptible than cash transfers to periods of high inflation, when the value of the latter can be quickly eroded. By their nature, in-kind transfers are less fungible than cash transfers, so they are often argued to be a more cost-effective means by which to raise welfare if they are correctly targeted.

Several types of in-kind transfers have been implemented—general price subsidies (predominantly in African and Middle-Eastern countries), quantity rationing (South Asia), food stamps (Latin America), and nutritional interventions such as direct food transfers, which are prevalent everywhere. In addition, there is also extensive use of housing subsidies throughout Eastern Europe.

#### Public Works

These programs are often implemented only during a downturn in the economic cycle. As well as providing employment for the poor, the programs also serve to build a nation's

infrastructure, an essential component of any development policy. It is important to keep the costs of participating in such programs low, e.g., by minimizing traveling distances, in order for them to be effective in reaching the poor. Hence there are non-poor gainers from such programs. Examples of such schemes include the public employment schemes in Argentina (the *Trabajar Program*), Bolivia (*Emergency Social Fund*), Chile, China, and India.

**Informal Safety Nets**

In many societies we also tend to observe the existence of informal networks of support, based perhaps on kinship or community ties, that also seek to mitigate against income shocks. For example, in many Islamic countries such as Pakistan, the informal institution of *zakat* acts as a tax on wealth, collected by mosques and redistributed to the poor. In many Sub-Saharan countries and in India, there is a system of labor transfers within communities. Finally, in China, there are structural features of the rural economy, such as universal and egalitarian access to land, which help to insure individuals against adverse outcomes.

A key issue for policymakers is whether such private transfers are crowded out by publicly provided social expenditures and, if so, to what extent this crowding out occurs. There is a large body of literature that deals with exactly this issue and this will be discussed in more detail later in this paper.

One of the main factors determining the effectiveness of safety nets is their ability to correctly target the poor. Targeting can be based either on self-reports from individuals (where incentives must be provided for individuals to truthfully report their well-being) or on measured household characteristics or regional characteristics.

The other crucial issue regarding the ability of these programs to effectively reach and be able to help the poor, is the manner in which they are implemented. For effective implementation we require a supportive institutional framework, i.e., one that is not subject to corruption or rent-seeking, or that is not plagued by bureaucracy, and where the rule of law is respected. It is one of the key objectives of the empirical analysis in this paper to examine how well governments perform in the provision of safety nets, relative to international benchmarks when institutional quality is explicitly taken into account.

## III. Safety Nets and Welfare

### *Policy Objectives*

To be able to address the question of how much countries should spend on safety nets, we require some objective function to be evaluated. There are two principle ways in which this can be done. First, we can take our basis from economic theory, which suggests that, when the marginal benefits of different types of social expenditure are equal to the marginal costs of raising public funds, an efficient outcome is reached. However, the data requirements for such an analysis are unreasonable, especially on the benefits side.

An alternative way in which an objective may be defined is in terms of outcomes directly, such as reducing the poverty gap by *x%*, reducing income variability, reducing the percentage of the population affected by natural disasters or communicable diseases, increasing participation rates in the labor force, or reducing the incidence of child labor. However, it is still the case that in order to assess whether such a policy is feasible, cost

considerations still come into play. Such policy targets may be unattainable given resource constraints that are not taken into account explicitly.

A third method to address the question of how much governments ought to spend is to adopt some measure of where a safety net should be set (effectively setting the poverty line), such as a dollar per day or half the median income, and then see whether social expenditures do indeed reach those that they should, or identify which subgroups of the poor are most effectively targeted. Unlike the previous two approaches, there is no need to consider the costs of provision here as it is taken as given that what governments are observed to be doing is actually feasible.

### *Defining and Measuring Poverty*

All of these three methods presuppose that poverty can be measured, but this is by no means a straightforward issue either. The first thing to decide upon is the metric we believe best approximates welfare, in order to be able to measure poverty. The alternatives available include income, needs, and capabilities. To take income as a measure of well-being is to focus on the commodity basis of well-being, but often our intuition suggests that claims over commodities are not the only factors that contribute to well-being. Uncertainty regarding one's economic environment, the set of available opportunities, non-market sources of welfare, and one's biological and physical status are not easily captured in the framework of commodity possession. Furthermore, as has been pointed out by Dreze and Sen (1990) it is typically at times of economic crisis such as drought or floods that the mapping between an individual's income and entitlements to market-produced goods becomes most unclear.

An alternative route is to measure well-being in terms of an individual's needs. The issue then becomes what set of needs constitute an individual's basic needs, which if not met would imply the individual was poor. Even if a consensus can be reached on this bundle of basic needs, in practice this approach often tends to revert to converting such a bundle into the equivalent amount of income required to purchase it.

Using the capabilities of an individual, i.e., what an individual is able to do and be, was first introduced by Sen (1985). The aim is to be able to incorporate non-market sources of welfare such as available opportunities, political empowerment, and so forth. The notion of capabilities underpins the Human Development Index, and has thus been used to provide the basis of international comparisons in well-being. Measures such as the prevalence of diseases (such as AIDS or malaria), or hours worked by children, may be particular measures of capabilities that can be employed.

Ultimately, however, until micro-data is collected on capabilities, it appears as if some income-related measures, such as consumption or expenditures, will be used in studies that address the question of how much governments ought to spend on safety nets. The case in favor of such income-related measures is not only made on the grounds of data availability, but also the strong evidence that exists that many other welfare outcomes, such as mortality, nutritional status, and life expectancy at birth, are all highly correlated with income levels. Hence, income, while far from being a perfect measure of well-being, captures at least to some degree some of the wider notions of well-being that these alternative metrics capture. Work is ongoing by the World Bank and others to construct indicators of poverty along the dimensions of risk and vulnerability, social exclusion, and access to social capital, which may all prove in

the long run to be preferable measures of welfare when addressing the particular question of safety net spending.

Given that we have established some measurement of poverty, we still have to determine where the poverty line must be set. The literature on this is huge (see Lipton and Ravallion (1995) or Ravallion (1998) for good reviews), but the main issues are whether the poverty line should be defined in absolute or relative terms and if, or how, to take account of the degree of inequality and heterogeneity amongst the poor. Armed with a poverty line, we are now in a position both to motivate policy and focus the attention of policymakers on the plight of the poor, and to address the effectiveness and distribution of benefits arising from safety net expenditures for a given objective.

### *Existing Methodologies*

There is a large body of literature, discussed below, which attempts to assess whether governments spend the desired amount by assessing the welfare impacts of social expenditures and also whether such policies are efficiently targeted. The principal methods by which to assess the welfare impact of social expenditures are benefit incidence studies, behavioral approaches, and computable general equilibrium (CGE) models. See Selden and Wasylenko (1992), van de Walle and Neads (1995) and van de Walle (1998) for surveys of the literature, and Hammer (1997) for an alternative discussion of the issues. Data limitations have meant that these studies have been largely focused upon developed Central and South American economies.

#### Benefit Incidence Studies

Benefit incidence studies are the benchmark public economics cost-benefit approach to evaluating government interventions. These studies tend to focus on a particular type of expenditure, rather than public expenditures in general. They proceed by first grouping households or individuals according to some indicator of living standards. In order to make valid international and intertemporal distributional comparisons, this welfare indicator may be adjusted to take account of variations in the cost of living, say between rural and urban regions, and household demographics through some equivalence scale such as those discussed by Deaton and Muellbauer (1986) and Browning (1992). Earlier studies such as Meerman (1979) and Selowsky (1979) used household size as an equivalence scale. Later studies used equivalence scales but Jarvis and Micklewright (1995) argue that the results of benefit incidence studies are often found not to be robust to the equivalence scale used.

The method then assumes that the benefit which accrues to households can be proxied by the value of government expenditures. Having obtained a poverty profile, we can use observations on the number of actual beneficiaries to form a distribution of social expenditure across the welfare groups, which is then taken to be an indicator of the benefit incidence. The method then allows us to classify a program as either being progressive or regressive and to examine the actual effectiveness of targeting policy.

Benefit incidence studies have been employed for the past two decades, beginning with the papers by Reynolds and Smolensky (1977), Meerman (1979), Selowsky (1979), LeGrand (1982), and Gruske (1985). More recently, benefit incidence studies have been conducted by: Bahl, Kim, and Park (1986) in Korea: Riboud (1990) in Costa Rica; Ravallion, van de Walle, and Gautman (1995), who look at the distributional impacts of cash benefits introduced to

compensate for policy reforms in Hungary; the collection of papers in van de Walle and Nead (1995) such as Alderman and others on education in Pakistan, Deolalikar on the impacts of health expenditures on children in different income groups in Indonesia, and Selden and Wasylenko on educational expenditures in Peru; Prescott (1997), who examines the efficiency of targeting of education, health, and social transfers in Vietnam; and Hanmer and others (1998), who examine health expenditures in Zimbabwe.

Such studies are methodologically straightforward to implement and can provide information on how the benefits of public interventions are distributed across the poor, but give no clear indication of whether the efficiency criteria on levels of expenditure are satisfied. In practical terms, the data requirements can be severe, especially to construct welfare rankings. However, this method is also subject to a number of deeper criticisms. Most of these apply more broadly to most policy studies, not just those evaluating the benefits of safety nets.

The fact that such studies take the benefits that accrue to an individual to be well proxied by the average cost of provision to that individual can also be called into question. For example, the unit cost of immunization can be considered to be small relative to the lifetime benefits. The issue is complicated both because well-being is multi-dimensional and because the estimation of outcomes in the counterfactual world without public spending is not straightforward. More specifically, this would require us to calculate the extent of the crowding out of private and informal transfers by public transfers. Such data are typically not available.

Benefit incidence studies implicitly assume that there is a uniform cost of service provision over all households, or that the public good is homogeneous. To the extent that this is not the case, they may lead to incorrect inferences regarding the distribution of benefits of social expenditures.

The method, being a partial equilibrium analysis, implicitly assumes that relative prices and real incomes do not change, and that marginal benefits are equal to average benefits. However, there may be a divergence between average and marginal benefits. For example, if there are increasing returns to scale from public expenditures, which may be the case for infrastructural investments such as roads or electrification, then the marginal benefit is likely to be greater than the average, as such public goods are provided to more households. A characteristic that this methodology has in common with behavioral approaches is that it assumes the geographical distribution of the population to be static. In the case of developing countries, regions well-endowed with public services can induce population inflows or cause wage differentials to arise which lead to worker migration (see Todaro 1969, Williamson 1988).

In the context of developing countries, benefit incidence studies have to take account of the possibility of resale of public goods, especially due to the presence of a large informal sector. Moreover, theory suggests that we can expect institutional structures such as interlinked factor markets, informal labor markets, to mean that the recipients of public services pass on any actual welfare benefits to moneylenders or landlords. We may expect this to be particularly the case in agricultural programs designed to raise farm incomes.

Benefit incidence studies typically take no account of behavioral responses by households to the introduction of public programs. Theory suggests that households will change their behavior, for example with regard to labor supply (females in particular may be able to devote more time to home production activities such as child care if their spouses are able to devote more time to the labor market), investment (as households become better off they may be more able to invest in education, health services, and fixed productive assets), consumption (households may be able to transfer budgets toward more nutritious foods), and private transfers of resources or time either within or across households. Empirical evidence is found in favor of such crowding out by Barro (1974), Andreoni (1990), Jimenez and Cox (1992) and Cox and Jimenez (1995), although such estimates do not suggest full crowding out. For example, Jimenez and Cox (1992) find that social security payments in Peru reduced private transfers from young to old by 20 percent.

Another limitation of this approach is that the use of cross-sectional household data only allows for the identification of static effects. This means that we do not capture various other benefits of safety net expenditure. For example, policies that are designed to alleviate chronic poverty may well have lifetime benefits for the individual. There may also be spillover social effects on other individuals in the household or between households in a community. Finally, there may also be intergenerational benefits of social expenditures. If, for example, parents are provided with employment, they may be more willing to educate their children, which we would expect to raise the lifetime earnings of the children. In short, not only are short-term behavioral responses ignored, but also lifetime, social, and intergenerational effects.

In addition, many of the forms of intervention that safety nets take are responding to the existence of some form of market failure, such as the presence of externalities or public goods. These elements are usually not captured in benefit incidence studies.

Furthermore, most of the available data are at the household level, yet ultimately we are concerned with the effects on individual welfare. This requires us to make assumptions about intrahousehold allocation mechanisms. The most common assumption made in the literature is simply to take per capita (or some other equivalization) consumption levels. However, there is much evidence that we may not have such equitable intrahousehold distributions, especially based upon gender or age (see Haddad and Kanbur 1990, 1993, Deaton, Parikh, and Subramanian 1994, and Deaton and Paxson 1996). On the other hand, we can also argue that, if households are not credit-constrained, then consumption will track permanent income, and so by using consumption as a welfare measure, we are in fact capturing how households react to dynamic and stochastic income shocks.

Such analysis does not establish the underlying mechanisms through which individuals respond to social expenditures. In essence, it is only the demand and supply of social expenditure, across welfare groups, that is identified, but such partial analysis does not allow us to recover equilibrating prices. Nor can we calculate the marginal incidence of policies. It is the average incidence which is identified, and this may hide much of the interesting information about the size of actual benefits across different welfare groups.

Notwithstanding such criticisms, we can still draw some broad conclusions from this literature. First, most studies find that expenditures on health, education, social transfers, and food subsidies are progressive inasmuch as they are higher for the poor as a fraction of their initial income or expenditure. However, it is generally concluded that the absolute benefits

tend to also increase with household income. It is also typically found, for those studies that make such a distinction, that benefits in urban regions are relatively greater than those in rural locations. However, most studies also highlight the need to disaggregate expenditures as much as possible. For instance, the progressivity of primary education expenditures is far greater than that of secondary education expenditures in most cases. The same issues arise when looking at different types of health service.

**Behavioral Approaches**

The second class of studies consists of behavioral approaches. These studies, while still operating in a partial equilibrium framework, do take explicit account of behavioral responses, and they also estimate the marginal and not the average incidence. The general methodology is to devise a means by which to evaluate the recipient's own valuation of the benefits received. In early studies, this valuation was proxied by the consumer surplus the individual obtained. It has long been realized, however, that this ignores the income effects of relative price changes. If preferences are known or can be inferred, then a compensated demand curve, along which utility is held constant, can be used to calculate the underlying utility function of consumers (see McKenzie 1983) on which measures of welfare benefits can be based, such as the real income per adult equivalent, and equivalent and compensating variations. This is precisely what later studies have done.

There are really two main issues concerning this approach. The first is how to obtain consistent estimates of estimated parameters from an econometric model and be sure that such estimated parameters actually correspond to the underlying structural parameters of the economy. The problems associated with this are again not unique to the analysis of safety nets, but apply to the evaluation of government policy in general. The second issue is the same as it was for benefit incidence studies, namely how to obtain some measures of benefits to undertake welfare analysis. This second factor has been discussed before, so for the remainder of this section we will concentrate on the first issue of recovering consistent parameter estimates.

It is well known that problems can arise in identifying consistent preferences if, for example, behavior does not accord with the underlying assumptions of utility theory. Also, the very fact that no markets exist for public goods makes the identification of the utility derived from their consumption problematic. In response to these issues, a literature on identification of the willingness to pay has been established which specifically studies the demand for public goods (see, for example, Gertler and others 1987, 1989, 1990). These studies allow calculation of willingness to pay across income, or other, subgroups. Hence, it is possible to examine, for example, whether the poor gain more on the margin than the rich from a given type of social spending. They deal with the issue of missing markets by proxying prices by the totality of monetary and non-monetary costs of public provision.

Another strand of the behavioral response literature uses non-monetary welfare metrics such as nutritional status, mortality, or literacy rates to assess the benefits of public expenditures. In practical terms, they do this by assessing the impact on such outcome measures of a set of inputs including socioeconomic background, income, prices, and public expenditures and complementary services. Examples of this approach are Deolalikar (1995) on health expenditures in Indonesia and Alderman and others (1995) on public schooling in Pakistan.

The main issue to be dealt with in such approaches is how to recover unbiased estimates of policy effects. The problem is that, by using policy variables as explanatory variables, we can typically expect these variables to be correlated with the error term, thus leading to biased estimates for ordinary least squares regressions. This correlation can arise from simultaneity, omitted variables, selection, or heterogeneity. We shall briefly discuss each of these in turn.

If policy is targeted using the same welfare indicator as the dependent variable, or another indicator highly correlated with this one, then policy is actually simultaneously determined with the distribution of welfare. For example, Besley and Case (1994) suggest using political variables that influence policy outcomes but are uncorrelated with welfare levels as an identification strategy. The policy itself is endogenously determined and its inclusion as an explanatory variable thus leads to standard ordinary least squares (OLS) endogeneity bias.

Pitt, Rosenzweig, and Gibbons (1995) look at the impact of government placement programs in Indonesia while explicitly controlling for the non-random allocation of this policy. They do this by examining the *changes* in outcomes over time in a given region (before and after the introduction of the policy). Such a fixed-effects procedure eliminates any unobservable program placement effects under the identifying assumption that the region-specific and time-varying shocks that affect program placement are uncorrelated with region-specific and time-varying shocks in the policy outcome equations. They find the simultaneity bias to be large enough to reverse the policy conclusions.

Alternatively, there may be some omitted variable that determines both policy incidence and welfare levels. An example of this may be policies introduced to locations in close proximity to urban centers, where welfare indicators are higher *per se*, e.g., due to a higher level of community assets, even before the implementation of policy.

Similar biases arise using OLS if there is a selection rule operating for those who receive the policy treatment so that the policy recipients are not a random sample of the population, or if there is some unobservable characteristic of individuals that influences whether they are subject to the policy, e.g., if only more able or well-motivated individuals seek to receive the policy treatment. Typically, the researcher can employ a Heckman procedure to introduce an additional selection variable in the equation of interest, which accounts for the potential correlation between the error term and the other covariates in the equation.

In short, when using cross-sectional data, it is very difficult to separate the effects of policy on welfare from the effects of all other observables and unobservables. The issues of bias can be partly ameliorated using fixed-effects estimation in panel data, using instruments for policy incidence, or using natural experiments when individuals randomly receive the policy treatment. The use of panel data in theory allows us also to determine both dynamic and behavioral effects, but this is easier to say than actually implement. There is now a growing literature exploiting such data sets, such as van de Walle, Ravallion, and Gautman (1994) and Ravallion, van de Walle, and Gautman (1995) on safety nets in Hungary.

There is also a growing number of studies that seek to exploit natural experiments. Here, the control and comparison groups occur naturally, and if we can observe all individuals

before and after the policy intervention, then using a difference-in-difference estimating procedure, the researcher can recover consistent estimates of policy effects. The underlying assumptions required for this method to work are that the disturbance term is additive in fixed and time effects, that there are common time effects across all individuals, and that there are no compositional changes in either group over time. The best known of such studies is that of Card and Krueger (1994) on the introduction of minimum wage legislation in the United States, and in the United Kingdom there are papers on the welfare-to-work program that use the natural experiments framework.

Despite having to deal with such a range of potential econometric difficulties, the literature on behavioral responses has shed light on a number of issues. A robust result from the majority of studies appears to indicate that demand for public services is price-inelastic and that there is much variation in this elasticity over income groups, with the poor being more price-sensitive, as we would expect. In a sense, these results shed little light directly on the question of how much governments ought to spend. The main conclusions have been mostly related to identifying the beneficiaries of safety net expenditures, and examining whether safety net expenditures have been effectively targeted toward the poor.

**Computable General Equilibrium Models**

Unlike the previously described methods, a general equilibrium model of social expenditure does not attempt to estimate parameters of the economy. Rather, computations are based upon given parameter values, and then the researcher attempts to discover how predicted outcomes change in response to these imputed parameter values.

The key advantage of such a modeling approach is that the researcher can specify a complete model of behavioral responses to social transfers, and thus incorporate the crowding-out effects of safety nets, as well as recovering equilibrium prices and so forth. The issue remains the reliability of the imputed parameter estimates, and whether robust conclusions can be drawn.

There are relatively few studies that have attempted such an analysis, one being Piggott and Whalley (1987). They are forced to make a number of simplifying assumptions, such as efficient provision of public services, in order to be able to make their model tractable. Their aim is to compare the two approaches above, hence they explicitly take into account how consumer surplus and the welfare costs of taxation change with increased social expenditures, and they also calculate the average and marginal welfare gains of public spending. Their results vary depending upon the imputed values of certain key parameters, which probably implies that more studies of the former types should be conducted to better empirically estimate such parameters. Other CGE papers include those of Hertel (1989) and Parikh and Srinivasan (1989) on agricultural policy.

When asking how much governments ought to spend, this type of study really requires precisely estimated parameters to have been estimated in prior studies. It is hard to extrapolate general implications from each of these studies. Given all of the econometric problems to be dealt with in order to be able to do this, it seems as if there is a long way to go before we can confidently use such a class of models to form the basis of policy interventions across countries.

## IV. Our Contribution

### *Summary of Previous Methodologies*

Ideally, in order to be able to answer the question of how much governments ought to optimally spend on safety nets, we would have the data available to estimate whether the marginal benefits of different types of social expenditure are equal to the marginal cost of raising public funds, thus ensuring resources are efficiently employed. In addition, we should be able to define poverty and measure welfare in ways that approximate the true well-being of individuals. However, as we have argued, it is unlikely to be the case that all of the conditions are adequately satisfied. Hence, we have a number of second best approaches which may be able to shed light on the same question. Before we detail our alternative methodological approach, let us summarize the previous discussion on how we may address the question of how much governments ought to spend on safety nets.

The first approach of benefit incidence studies was seen to rely on the availability of large amounts of information, and was a partial equilibrium approach, ignoring the potential crowding-out effects on private transfers, or market failures in general.

The behavioral approach attempts to determine the underlying demand function for safety net expenditures. The issues here relate to, first, how well such analysis controls for potential sources of econometric bias arising from omitted variables, the simultaneous determination of relevant outcomes and program placement, the non-random selectivity of individuals into a program, unobservable individual heterogeneity, and so forth. Secondly, we have concerns regarding how well estimated parameters map back to structural parameters of the economy in order for us to be able to extrapolate our experiences across programs and countries.

Both of these approaches have been closer to addressing the questions of: (i) whether the poor are effectively targeted by safety net programs, and (ii) what the distribution of benefits of safety net expenditures is. We can relate such questions to the central question here of how much governments ought to spend by noting that, first, if the poor are not effectively being targeted then that would suggest that resources are being used non-optimally in that the marginal benefits accruing to the non-poor would typically be less than those that would accrue to the poor. The policy lesson to be drawn from this is that governments should either cut back such expenditures or retarget them toward the poor using some alternative targeting mechanism. Secondly, if it appears that there is wide dispersion of marginal benefits across the population of the poor, this again suggests a non-optimal level of spending. A necessary condition for an efficient outcome to have been reached would be the equalization of marginal benefits across the poor.

### *Our Methodology*

The methodology we employ to address what level of social spending governments ought to attain is quite different from those previously discussed. We resolve the difficulties of defining an objective function by taking the view that what governments can potentially do in terms of spending on various types of social safety net expenditures, as well as the total level of government expenditures, is given by what governments across the world are actually observed to be doing on average. We thus take as given that what countries are observed to

be doing is an indication of what it is feasible to do. It is this underlying notion of benchmarking that both serves as the basis of our analysis and provides a useful framework to convince governments to put more effort into such policies.

In essence, our aim is to be able to obtain some measure correlated with a government's effort into effective spending on safety nets, relative to what other governments are seen to be doing. Suppose that the outcome that we observe on any policy for country *s* at time *t*, $x_{st}$, can be written as

$$x_{st} = \beta e_{st} + \gamma y_{st} + \eta_t + \varepsilon_{st}$$

where $e_{st}$ is some measure of government effort, $y_{st}$ is a vector of characteristics affecting the ability of the economy to produce these outcomes, $\eta_t$ is a common "shock," which all the economies in question experience and $\varepsilon_{st}$ is an idiosyncratic shock uncorrelated with everything else. In general, data constraints mean that we can get only an imperfect set of controls ($y_{st}$). Our methodology is to use these data to obtain information on the unobservable level of government effort ($e_{st}$).

Suppose that government effort put into delivering policy is dependent on the costs and the payoffs that it faces for doing so. Let the payoff be denoted by $r(e; i)$, where *i* is some measure of the information available to those designing the reward structure. This payoff can be interpreted by politicians as the value of holding office. The interesting case is where improved information raises the marginal benefit of putting in effort. However, this is by no means inevitable.

The idea of designing meaningful benchmarking is to lead governments to increase the effort that they put into delivering outcomes. We propose using rank order information as a measure of government performance. This is useful provided that information about the rank conveys information about unobserved effort on the basis of which rewards can be designed.

The conditions under which this will happen are that

- $\eta_t \neq 0$.
- the variance in $\varepsilon_{st}$ is small enough.
- $\frac{\partial^2 r}{\partial e \partial i} \geq 0$.

Our methodology produces rankings that allow us to benchmark country performance. Our first ranking is based upon the unconditional policy outcome, $x_{st}$, namely the level of safety net spending. We then construct rankings conditional on observable features of the economy, and these will be based upon the information contained in the conditional level of safety net spending, $x_{st} - \hat{\gamma} y_{st}$. We do this controlling for structural features of the economy that determine the ability of the country to finance such expenditures, the need for such expenditures, and the quality of the country's institutions.

Each ranking gives us a series of benchmarks to which countries' relative performance can be compared, as well as to their neighbors or economies at a similar stage of

development. In a sense, we are not asking how much governments should spend; rather, our methodological approach is to form an impression of the benchmark performance of governments. We thus avoid many of the data requirements in tackling the question of how much it is optimal for governments to spend. We also avoid the need to form an indicator of welfare to assess the benefits of safety nets, because we look at how much governments actually are *spending* relative to some international norm. One way to think about our approach (moving from the unconditional ranking $x_{st}$ to the conditional ranking where we control for features of the economy, $x_{st} - \hat{y}_{st}$) is to think of it as an attempt to estimate a demand function for social expenditures and then examine its properties. This equation embodies some features of the underlying decision process of policymakers.

The first thing to note is that there is wide variation in the levels of expenditures on safety nets across countries. It is hard to justify these variations simply on the basis that some governments are better informed about the optimal level of expenditures than others. Rather, these differences across countries will clearly be related to the levels of poverty and needs for these social expenditures, to the ability of governments to meet these needs subject to resource constraints, but also to underlying differences in preferences and objective functions of policymakers across societies. Furthermore, these differences may be reflective of the varying institutional factors across countries that we have argued will influence the ability of governments to effectively reach the poor for a given level of social expenditures. Our methodology will attempt to account for the variation in the observed levels of expenditures by first accounting for features that can be considered to be structural to the economy, in the sense that these capture both the need for safety nets and a country's ability to pay for them, and then additionally controlling for how much of the remaining observed variation in expenditure levels is due to differences in institutional features of each economy.

To be able to disentangle these two sources of variation in safety net expenditures is important for two reasons. First, it allows us to see what structural features of an economy contribute to safety net expenditures, and so we uncover a basic demand function for social expenditures. Secondly, we can separate out these effects from those related to institutional quality. We can thus make policy prescriptions based upon both the underlying features of the economy and recommendations related to the reform of institutions. Being able to offer policy advice on both of these dimensions is not possible using the existing methodologies discussed earlier. Furthermore, our analysis uses benchmarking to motivate governments to act in accordance with policy recommendations.

In order to make the relative performance of countries easily comparable, we prefer to report our results in terms of the ranking of countries relative to each other, when each is compared to the international norm. The ranks of each country provide a simple summary statistic that can be presented to governments to argue the case for more (or less) safety net expenditure. Furthermore, the currently available cross-country data series do not allow us to control for all the structural features that we believe would drive safety net spending. This may lead to concerns about potential sources of bias affecting our estimates. In this case, the use of rankings, rather than a literal interpretation of the parameter estimates, can make our results slightly more robust. We will discuss this in more detail in section five.

The way in which this international norm is established, and the various rankings that we shall form, will also be discussed in further detail in section five. For the remainder of this section, we wish to focus attention upon the determinants of safety net programs. In

attempting to fairly compare levels of safety net expenditures across countries, we will first need to be able to establish what these factors may be.

**Summary of Benchmarking**

- Benchmarking allows governments to compare their own performance with that of their neighbors. This can motivate governments to act on policy advice.
- Benchmarking through the use of use of rankings conveys information on the underlying effort being put in by governments on these policy outcomes, in a very clear manner. The data requirements to construct these rankings are minimal compared to alternative methodologies.
- Our methodology allows for the policy debate to be conducted in terms of the structural features of an economy, as well as the design of institutions within the country, with a view toward improving rankings.
- We do this by constructing three ranks—first, a ranking based upon unconditional expenditures on safety nets; second, a ranking conditioning on structural features of the economy; and third, a ranking also conditioning on the institutional quality within the country.

***What Determines the Need for these Programs?***

The real primitives of any economy are tastes, production technology, endowments, and the distribution of information. From these primitives it is possible to identify situations when government intervention is either advisable or necessary. Rather than starting from these primitives, in our analytical framework we prefer to begin one step ahead by looking at various institutional and country-specific factors that determine the need for social safety nets. The four factors that will determine the appropriate level of safety net spending are discussed below. Though we recognize that these primitives may be endogenous to government intervention, they nonetheless have the advantage that they may (i) be directly linked to policies and (ii) are measurable in data.

**Factor A: Underlying Distribution of Productive Ability**

The distribution of such factors as physical assets (e.g., land), human capital, and labor power will influence the need for social safety nets. Access to assets, levels of education and skills, and labor will affect individuals' ability to avoid chronic poverty and to protect themselves from shocks.

**Factor B: Institutions for Private Provision**

Families, friends, and informal networks represent the main means of social protection in developing countries. Individuals can also rely on markets to protect themselves from specific contingencies such as poor health and downturns in income. How well these institutions of private provision function will therefore determine the need for social safety nets. This, in turn, will be a function of the degree of social and market development in a given economy. Therefore, the need for intervention will tend to be less when there is more equal distribution of productive ability and where institutions for private provision (both formal and informal networks) function well.

**Factor C: Quality of Government**

Factors A and B miss out on the fact that government is also an institution, the quality of which will determine the appropriate level of spending on social safety nets. Therefore,

where bureaucratic integrity is low and preferences of the poor are not represented in the allocation of fiscal resources, it may be inappropriate to expand spending on social safety nets.

In other words, if the institutional framework of an economy is misallocating resources, e.g., to special interest groups or those that are most vocal, as opposed to those in the greatest need, then the correct policy prescription to prescribe may be a reduction in such expenditures. For the reasons we made clear in section two, incorrectly targeted social expenditures that primarily benefit the non-poor will likely harm social cohesion and increase the resources spent on marginalized economic activities such as the black economy, which in the long run will only serve to reduce a country's sustainable level of income growth and weaken its ability to respond effectively to external shocks and crisis. Furthermore, improving the functioning of institutions may be a necessary precondition before it is appropriate to increase expenditures on social safety nets. Also, it may be optimal for a country with a poor quality of government to spend little on social safety nets, as this expenditure will have only limited impact on poverty alleviation.

**Factor D: The Nature of Shocks Affecting the Region or Country**

Some countries are prone to natural calamities such as droughts and floods. Integration into the global economy via trade and other mechanisms may also make some countries more prone to financial and terms-of-trade shocks. Characterization of the shocks likely to affect a given region or country is thus necessary when deciding on the appropriate level of spending on social safety nets. The nature and frequency of shocks will affect both the aggregate need for safety net spending and the type of safety net spending that is appropriate.

### *Scope for Institutional Reform*

The methodology we are proposing will allow us to assess whether countries or regions are spending too much or too little on social safety nets relative to some international benchmark, rather than through some objective function that we seek to optimize. This can be done both at the aggregate level and also within specific dimensions of safety net spending. However, it also raises the prospect of viewing direct institutional reform of areas (A) to (D) as an alternative policy to raising or lowering spending levels. It is difficult to directly cost institutional reforms and thus to quantitatively contrast their effectiveness in alleviating poverty with expenditure adjustments. The methodology we are proposing will nonetheless allow us to isolate important areas of institutional reform that may improve the efficiency of social safety net spending, as discussed above. The methodology we are proposing is powerful as it points both to the necessity of controlling for factors (A) to (D) when thinking about the appropriate level of social safety net spending in a given country and because it points to institutional reform as an alternative direction of policy reform to reduce poverty and vulnerability.

### *Informal Explanation of the Rankings*

We begin with the actual levels of government expenditures on various types of safety net expenditures expressed as a share of GDP. As already noted, there are wide variations in these pure unconditional levels of expenditures. This forms the basis of the first rank, rank one (hereafter referred to as R1). In short, this corresponds to each country's starting rank in *level* of safety net expenditures. As we do not take account of any other features of the economy at this stage, neither structural nor institutional, we shall refer to this rank as the

unconditional rank of countries. According to R1, the country with the highest ranking is that country which spends the most on safety net expenditures as a share of its GDP. This ranking provides a good starting point from which to then compare how a country's relative performance changes as we account for the structural and institutional features of the economy.

We then move on to the second rank. This is constructed by regressing a country's level of safety net expenditures on factors we have argued to be structural to the economy, i.e., those factors that capture both the level of need for safety nets and the ability of a country to meet these needs given its resource constraints. Structural factors that we include in our analysis include: (i) the (log of) per capita income of the country which proxies for the government budget constraint; (ii) the fraction of the population of working age (between 15 and 64), which captures the level of dependency in a country—in most countries, children and the elderly are particularly susceptible to poverty by various alternative measures of welfare that we may employ; (iii) the fraction of the population residing in urban regions, which again can capture an element of neediness in the population, given that the poor most often reside in rural locations; (iv) a measure of shocks to income per capita, i.e., how far a country is from its long-run sustainable income level in any given year, because such cyclical components could also be correlated with expenditures.

Regressing the level of safety net expenditures on each of the factors gives us a simple demand function for social expenditures. We should be careful not to imply too much causality in the relationship between the covariates and the level of expenditures. Our approach is merely to identify likely correlates of social expenditure levels. Having controlled for these structural features, we are still left with an unexplained component of the level of expenditures. It is this unexplained component that is then ranked to form rank two (R2). The level of social expenditures that we cannot explain controlling for structural factors can be positive or negative. In other words, for a given set of structural features, a country may actually be spending more or less than we would predict, taking what the average country does as being the international norm. This is precisely what an OLS regression does—it calculates the average effects of each covariate on the outcome of interest. In our application, we calculate the predicted levels of social spending, controlling for the aforementioned structural features, relative to this international benchmark.

It may be argued that the benchmark as set by a regression line is rather arbitrary, and unrelated to any welfare criteria. However, there are three points to be made on this. First, our approach is to deliberately move away from the optimizing approach in order to answer how much governments ought to spend, and to do this in a such a way as to avoid having to specify any welfare criterion. This is in order to be able to attempt to answer the question without requiring unfeasible amounts of data. Secondly, what countries are actually observed to be doing on average is a good indication of feasibility constraints and provides a natural focal point for what countries ought to be able to do. Thirdly, the method is easily implementable and provides simple summary statistics, in the form of rankings, to present to policymakers. This ease of presentation should facilitate a constructive policy dialogue and debate.

If a country spends more than we would predict given its level of structural features, this would suggest it spends more on safety nets than needs or cost considerations alone would explain. The opposite is true if we find a country spends less than it should. According to R2,

the country with the highest ranking is that country which spends the most in addition to what we would have predicted, controlling only for structural factors.

We now take account of the institutional framework within a country, which we have also argued influences the levels of safety net spending and the effectiveness of a given level of expenditures. The set of institutional features we take into account are the following (all definitions are in the data appendix): (i) the level of repudiation of government contracts; (ii) the threat of expropriation of assets by government; (iii) the level of corruption in civil society; (iv) the effectiveness of the rule of law; and (v) the amount of government bureaucracy. These factors are argued to be correlated with the quality of government and so may indirectly affect social safety net spending.

In order to form a cross-country ranking taking into account these institutional features, we take the amount of unexplained expenditures from R2, and regress these on these various quality-of-government indicators. We then examine how much of this disturbance still cannot be explained. Again, countries may be above or below the predicted levels—the benchmark is again given by the "average" country.

We rank these unexplained components in R3, which now takes account of structural and institutional factors. A country with a positive unexplained component is interpreted to be spending more than we would expect given the quality of its institutions and structural characteristics of the economy. The opposite applies to countries with negative unexplained levels of spending. The highest rank for R3 is given to the country with the largest positive residual component.

**Summary**
The three cross-country rankings we employ are;[2]

- R1 rank one: unconditional ranking of safety net expenditure
- R2 rank two: controlling for structural features of the economy (which proxy for the need for safety nets and the ability of the government to meet these given its resource constraints)
- R3 rank three: controlling for institutional features that proxy for the quality of government, as well as the structural features controlled for in rank two

The presentation of our analysis in the form of rankings is useful because:

- It is a simple summary statistic on which to base arguments to policymakers for changes in spending.

[2] Lindert (1994, 1996), using OECD data, examines the traditional view that the deadweight costs of increased taxation will limit social spending, and finds that this explanation cannot account for the observed variations in social spending within this group of countries. He finds that the levels of social spending are more determined by age distribution, level and distribution of income, and level of political participation. While it is clear that Lindert's is not a positive analysis, it does suggest that the levels that governments ought to be spending is more determined by these underlying structural factors in an economy than the marginal cost of raising public expenditures through taxation.

- The use of rankings makes our results more robust to econometric concerns arising from the potential endogeneity of some covariates, as well as omitted variables due to lack of data.
- The data requirements for this approach are minimal. For instance, we do not need to define any welfare criterion by which to judge optimal levels of spending.
- International or regional norms provide a natural point of comparison for how much effort governments are seen to be putting into safety net spending. They can also be used to motivate policy discussions.

***Comparisons Across Rankings***

It will also be useful to compare how a country's rank changes according to these three procedures. We may find, for example, that countries which appear to have high levels of social spending (high R1 rank) actually are not spending as much as we may expect them to once structural factors are taken into account. Similarly, there may be cases of countries that appear at first glance to be spending relatively little on safety nets but, once we account for their ability to pay for such goods and services, or their weak institutional framework, may actually be spending a lot relative to the international benchmark. Thus, the movements across rankings contain much information, as well as the rankings themselves.

Of course it is possible not only to compare countries to the international benchmark as set by the regression fit, but also within regions, whereby we will be able to examine good and bad performers, and we will also be able to compare the relative performance of neighboring countries that may appear to have all of the same measurable economic characteristics. This may help to induce a form of yardstick competition when the results are presented to policymakers. Namely, policymakers may be induced to put more effort into safety net spending if they see that their neighbors, who may face similar resource constraints and levels of need, are able to perform better in the rankings we construct. In section six we will present a detailed analysis of all of our results, and in section seven we discuss how this paper can be used in a constructive policy dialogue.

We have conducted this sort of analysis across Indian states, forming R1, R2, R3 across 15 states. The set of covariates used there in the construction of these rankings is slightly different from that used in the cross-country analysis, although the methodology and interpretation of the results is identical. The details of both types of analysis are the subject of the next section.

In comparison to benefit incidence studies or behavioral approaches, our data requirements are a lot less strenuous. While there are issues of endogeneity to perhaps be concerned with in our regression analysis, say because we may believe that the level of urbanization itself cannot be taken as exogenous but itself depends upon the level of safety net expenditures, nevertheless, unless these forms of bias vary systematically over countries, the analysis of the various *rankings* remains unchanged, although we should not then place too much literal interpretation on the actual regression estimates. We at least manage to make some crude attempt at taking account of the level of need, ability to pay, and quality of government in this analysis.

Most importantly, when addressing the question of how much governments ought to be spending, we move away from an optimizing approach to this question altogether, and focus instead on country performances relative to international norms, and this gives an alternative way of thinking about the same problem, as well as being able to present policymakers with a simple summary statistic on how well they do compared to their neighbors, and at least an indication of why their rank relative to their neighbors is where it is.

## V. Making Benchmark Comparisons

### *Cross-Country Analysis*

In this section we formally detail how our rankings are constructed. The data used in the analysis were drawn mainly from the *World Development Indicators* database (http://www.worldbank.org/data/wdi/home.html) and the *IMF Government Finance Statistics Yearbook.* These are the only sources of consistent and comparable statistics which are available over a reasonable time period (see data appendix for variable definitions). The drawback is that (i) different types of safety net statistics are not disaggregated and (ii) social assistance and social insurance measures are reported together, whereas our interest is mainly in the former. There is thus a clear need to build more detailed data sets on different aspects of safety net spending to which the analytic framework could be applied. This exercise is, however, beyond the scope of the current project.

**R1: Unconditional Safety Net Expenditures**

We constructed a cross-country panel data set over the period 1972–97 with data averaged over five-year periods. We have data on the levels of safety net spending in country $i$ of type $j$ in period $t$, as a share of GDP, denoted $s_{ijt}$. Rank one (R1) is simply the ranking of an individual country in $s_{ijt}$ for each type of safety net spending ($j$), averaged over all time periods. We shall denote this time average of social spending of type $j$ in country $i$ as $\bar{s}_{ij}$. Hence, R1 corresponds to the unconditional ranking of the level of safety net expenditures as a share of GDP, across countries. The higher a country's ranking, the higher the amount that nation spent on safety nets of type $j$ on average over the time period 1972–97.

The types of safety net expenditure variables that are available to us are (complete definitions are given in the data appendix):

- **Transfers to Organizations and Households:** transfer payments to private institutions which are not operated as enterprises; current payments in cash to households adding to their disposable income; and
- **Social Security and Welfare:** transfer payments to compensate for loss in income or inadequate earning capacity.

In addition, for completeness, we also look at the two most commonly used observed forms of social spending—education and health. However, we would not typically think of these as constituting a safety net as defined in section two. For example, health spending includes expenditures on all medical instruments and medical research. Similarly, for education expenditures, one would not want to classify tertiary and university expenditures as safety nets.

The remaining safety net categories are close to our earlier definition of safety nets, although the availability of more disaggregated data, consistently defined across countries and time, would be ideal, as this would enable a closer matching between our definition and the expenditure types actually considered.

**R2: Controlling for Structural Features**

Moving to the construction of rank two (R2), we run a linear OLS regression of the form;

$$(1) \qquad s_{ijt} = \beta \mathbf{X}_{it} + \gamma \mathbf{Z}_i + v_{ijt}$$

where $s_{ijt}$ denotes safety net expenditures in country *i* on safety net *j* at time *t*

$\mathbf{X}_{it}$ = A vector including log(real per capita GDP per capita), a measure of shocks to GDP per capita, the fraction of the population aged between 15 and 64, the fraction of the population residing in urban regions.

$\mathbf{Z}_i$ = Set of regional dummies for Latin America and the Caribbean, sub-Saharan Africa, North America, South Asia, Middle East and North Africa, East Europe and Central Asia, East Asia and Pacific, with Western Europe being the omitted category.

We deliberately exclude country fixed effects precisely because we want to try to unpack what this fixed effect may be comprised of, and how in particular it may be related to institutional features. With the inclusion of the set of regional dummies, we are effectively calculating the regression (1) in terms of deviations from regional means.

After having run (1) we obtained a residual, $\hat{v}_{ijt}$. This is the variation in safety net spending that we are unable to explain after controlling for structural features of the economy—these variables have proxied for the ability of the country to pay for safety nets and the need for such expenditures.

We then average this residual over the sample period for each country to form $\bar{\hat{v}}_{ij}$. It is this averaged residual that we use as the basis for our second ranking, R2. This time-averaged residual gives us a single summary statistic for each country that facilitates comparisons across countries. To be clear, R2 is based upon the time-averaged unexplained component of safety net expenditures once the structural factors of the economy, $\mathbf{X}_{it}$, which control for the needs and budget constraints of the economy, are taken into account. This averaged residual may be negative, implying that, over time, the country is spending less on safety nets of type *j*, given its structural parameters, than we would have expected given what other countries are spending on average. Given that we control for regional dummies ($\mathbf{Z}_i$) in (1), the comparison group is the set of countries in the same region as *i*. The opposite applies if this averaged residual is positive. The lower the ranking by R2, the lower (more negative) the residual.

**R3: Controlling for Institutional Quality**

Finally, we move to the construction of the third ranking, R3, which summarizes how much of the unexplained variation in the level of safety net expenditure for country *i* can be explained by controlling for the quality of government in that country.

More precisely, we regress the time-averaged fitted residual on a series of measures capturing institutional quality. These measures are averaged over time because there is not much variation in each of them over time. Thus, it is as if we are running a cross-sectional regression having averaged over all time periods. The specification of the regression that forms the basis of R3 is then given by:

$$(2) \qquad \bar{\hat{v}}_{ij} = \gamma + \delta Q_i + \omega_{ij}$$

where these measures of quality of government, $Q_i$, are:

- **Repudiation of Government Contracts:** indicates the risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down;
- **Expropriation Threat:** risk of outright confiscation or forced nationalization;
- **Corruption:** special payments demanded by high officials, and illegal payments expected throughout lower levels of government;
- **Rule of Law:** reflects the degree to which the citizens of a country are willing to accept the institutions established to make and implement laws and adjudicate disputes; and
- **Government Bureaucracy:** autonomy from political pressure and strength and expertise to govern without drastic changes in policy.

The data source for these measures is the *International Country Risk Guide* (ICRG), a monthly publication of Political Risk Services. Full details are again found in the data appendix. All of these indices decrease as quality worsens.

Having run equation (2) we obtain a fitted residual, $\hat{\omega}_{ij}$. This residual is the unexplained component of safety net spending that cannot be explained after controlling for both structural and institutional characteristics.

The third ranking system, R3, is based upon this residual, $\hat{\omega}_{ij}$. Again, it can be the case that this residual may be positive or negative. A positive residual implies that the country is spending more on social safety nets once structural features of its economy and institutional quality have been controlled for, than we would otherwise expect given the expenditures of other countries in the same region. The opposite is true if this residual turns out to be negative. The lower the ranking of R3, the lower (more negative) the value of $\hat{\omega}_{ij}$.

**Summary of Rankings**

We summarize the basis of our three alternative ranking systems below:

R1 time-averaged unconditional ranking of safety net spending of type *j*, based on $s_{ij}$. A lower ranking means that the country unconditionally spends less on safety nets of type *j*.

R2 ranking of social spending conditional on structural factors, $\bar{\hat{v}}_{ij}$. A lower ranking means that safety net expenditures are lower than we would expect compared to the countries in the same region, controlling for structural features of the economy.

R3 ranking taking into account quality of government, $\hat{\omega}_{ij}$. Again, a lower ranking means that safety net expenditures are lower than we would expect compared to the countries in the same region, controlling both for structural and institutional features of the economy.

- Once we take account of how much a country is actually able to spend on safety nets, we may find its international ranking increases (moving from R1 to R2), and if its ranking further increases as we move to R3, it may be possible to infer that the country has institutions that are effective in translating whatever resources it has into safety net spending.
- Similarly, if we find a country's ranking to be falling as we move from R1 to R2 to R3, we could infer that, although at face value the country appears to perform well in terms of how much it spends, it actually performs worse than we would predict given the characteristics of its economy and the quality of its institutions, relative to the international or regional benchmark.

***Indian State Level Analysis***

We now turn our attention to the analysis at the level of Indian states. Again, we seek to use our methodology to make some benchmark comparisons across states regarding how much each state spends on safety nets relative to the others. We use panel data on 15 major Indian states over the period 1960–92.

The approach closely mirrors that of the cross-country analysis, where we establish three rankings on states—R1, the unconditional ranking by the level of expenditure in various categories of safety nets; R2, the ranking conditional on structural features of the state economy which again are designed to capture both the level of need for safety nets in the state and the state government's budget constraints; and R3, which conditions both on structural factors and on state institutional factors. The interpretation of each of the rankings remains identical to that for the cross-country analysis.

The main differences between this analysis and that for the cross-country data set are that: (i) the classifications of safety net expenditures are different; (ii) the set of structural features we control for are different from those in the cross-country analysis; and (iii) our measures of the quality of government are also different from the earlier analysis.

Unlike in the cross-country analysis, the use of panel data allows us to control for unobservable structural factors that are common to all states, in the construction of the ranking R2, and to control for common unobservable quality-of-government variables in the construction of R3. Furthermore, in this data set we can be confident of having controlled for all common macroeconomic shocks that may determine safety net expenditure levels. We do this through the inclusion of state-level fixed effects. In short, then, we probably have more reason than in the cross-country analysis to be confident in the actual estimated effects of structural and institutional features on the level of safety net expenditures, as well as the rankings themselves.

**R1: Unconditional Safety Net Expenditures**

We have data on the levels of safety net spending in state *i* of type *j* in period *t*, denoted as $s_{ijt}$. Rank one (R1) is simply the ranking of an individual state in $s_{ijt}$ for each *j*, averaged over all time periods. We shall denote this time average of social spending of type *j* in state *i* as $s_{ij}$. Hence, R1 corresponds to the unconditional ranking of the level of safety net expenditures across states. As with the cross-country analysis, the higher a state's rank, the higher the amount that state spends on safety nets of type *j* on average over the time period.

The types of safety net expenditure variables that are available to us at this level of analysis are (complete definitions are given in the data appendix):

- Health
- Education
- Social Expenditures
- Food Subsidies
- Calamity Expenditures
- Development Expenditures
- Public Food Distribution[3]

**R2: Controlling for Structural Features**

To form the second ranking, R2, we run a linear OLS regression of the form;

$$(3) \qquad s_{ijt} = \beta \mathbf{X}_{it} + \alpha_i + v_{ijt}$$

where $\alpha_i$ are state fixed effects, and $\mathbf{X}_{it}$ is the set of structural variables proxying for the ability of the state to finance such expenditures, and the need for them. These include: state income per capita, which captures the budget constraints facing the state government; rural and urban headcount measures, which proxy for the level of need for safety nets; and rural and urban income gini coefficients, which again are included in an attempt to proxy the level of needs there may be for types of social spending—the greater the degree of inequality, the greater the number of individuals in poverty who would benefit from such expenditures.

Estimating the state level safety net "demand" function (3), we obtained a residual, $\hat{v}_{ijt}$. After averaging this residual over *t* to form $\bar{\hat{v}}_{ij}$, we obtain the basis of R2. In other words, R2 is based upon the time-averaged unexplained component of safety net expenditures once the structural factors of the economy are taken into account.

Just as in the cross-country analysis, this averaged residual may be negative, implying that, over time, the state is spending less on safety nets of type *j* relative to other Indian states, given its structural parameters. The opposite applies if this averaged residual is positive. The lower the ranking by R2, the lower (more negative) the residual.

[3] Unlike all of the other forms of safety net that we consider, which are in monetary terms, this transfer is in kind, and corresponds to public distribution primarily of rice and wheat.

**R3: Controlling for Institutional Quality**

We move to the construction of R3, which tries to see how much of the unexplained variation in the level of safety net expenditure for state *i* can be explained by controlling for the quality of government, once structural factors have also been controlled for. Again, the method is to regress the time-averaged fitted residual on a series of measures capturing institutional quality. The available measures for the state-level quality of government are:

- **Voter turnout:** the percentage of eligible voters in the state that actually voted in the last elections for the state legislature;
- **Political competition:** the relative number of seats in state legislatures of the Congress party vis-à-vis its closest rival political party;
- **Literacy:** male and female literacy rates;
- **Variance of Social Spending:** the variance of social spending that cannot be explained by the variance of state income and natural calamities;
- **Deviation from State Means of Level of Social Spending:** the deviation from state means of social spending, controlling for mean income levels and the occurrence of natural calamities.

These measures are poorer proxies for the quality of government than those available at the cross-country level. The rationale behind their inclusion is the following. The level of voter turnout measures political participation, which we may expect to be higher if individuals feel that the political process accurately reflects their preferences. In some sense, voter turnout can be thought of as measuring the extent to which citizens feel political institutions are legitimate. The measure of political competition is designed to capture the responsiveness of state governments to the electorate's preferences. State literacy rates may be used as a proxy for how well-informed individuals are about state government policies, and hence reflects the ability of state governments to make policy responsive to voters' preferences.

The final two measures reflect the variability of social spending, the argument being that lower-quality governments are more subject to pressures from special interest groups or rent-seeking of government officials and therefore we may expect such governments to have more variable expenditure levels. Cyclical movements can also lead to variations in levels of spending, but as these are common to all states they should not affect the ranking we form across states. Full details of how these measures are constructed are given in the data appendix. Formally, to construct the third ranking R3, we run a regression of the form:

$$(4)\quad \bar{\hat{v}}_{ij} = \gamma + \delta Q_i + \omega_{ij}$$

where the set of (safety-net-specific) quality-of-government measures are denoted as $Q_i$. Note that, unlike the cross-country analysis, there is enough variation here in our quality-of-government measures over time to be able to run the equation as a panel regression, rather than in cross-sectional form.

R3 is based upon the time-averaged residual from (4), $\hat{\omega}_{ij}$, i.e., that portion of the unexplained residual from regressing safety net expenditures on structural features that still

cannot be explained by the quality of government. Again, this residual may be positive or negative. A positive residual implies that the state is spending more on social safety nets once structural features of its economy and institutional quality have been controlled for, relative to other Indian states, than we would otherwise predict just based on these factors. The opposite is true if this residual turns out to be negative. The lower the rank of R3, the lower (more negative) the value of $\hat{\omega}_{ij}$.

We summarize the basis of our three alternative ranking systems below:

**R1** time-averaged unconditional ranking of safety net spending of type $j$, $s_{ijt}$.

**R2** ranking of social spending conditional on structural factors, $\bar{\hat{v}}_{ij}$.

**R3** Ranking also taking into account quality of government, $\hat{\omega}_{ij}$.

As with the cross-country analysis, movements across each of these rankings can be used to make inferences regarding the structural features or institutional quality of the state in comparison with other states.

***Welfare Outcome Regressions***

Up until this point we have been concerned with benchmarking the relative performance of countries and Indian states with regard to safety net expenditures. We now follow a similar line of reasoning to benchmark their performance in terms of some key welfare indicators. We thus extend the analysis to see how structural and institutional features affect various welfare-related outcomes. We do this both across countries and at the Indian state level.

The motivation for performing this type of analysis is similar to before—what we observe are large variations in welfare indicators across countries. We would like to be able to assess the relative performance of countries (or states) by taking account of (i) the structural features of the economy, which should include the level of a social safety net in the country as well as the budget constraints facing the economy; and (ii) the institutional features of the economy, which may by correlates of the effectiveness of safety net expenditures to be translated into welfare improvements for vulnerable groups. Our aim is thus to construct three rankings analogous to our earlier analysis: R1, which is the unconditional rank of the welfare indicator; R2, which is the rank once we have accounted for the level of safety net expenditures and income levels; and R3, which takes into account the quality of institutions. By doing this we should then be able to comment on the extent to which structural or institutional features are correlates of these welfare outcomes.

Hence, it may be the case that we observe a country performing relatively poorly on a welfare indicator unconditionally. Once we take account of how much it is actually spending on safety nets, and what it is actually able to spend on safety nets, we may find its international ranking increases, and if its ranking further increases as we move to R3, it may be possible to infer that the country has institutions that are effective in translating whatever resources it is placing in safety nets into welfare enhancements. Similarly, if we find a country's ranking to be falling as we move from R1 to R2 to R3, we could infer that, although at face value the country appears to perform well on welfare indicators, it actually performs worse than we would predict given the characteristics of its economy and the

quality of its institutions, relative to the international benchmark set by what countries manage to do on average.

We examine the following welfare outcomes—for the cross-country analysis, life expectancy at birth and the infant mortality rate (IMR) of children aged less than one (per 1000 live births) are both available. At the Indian state level, only the latter of these is available. We briefly go through the construction of the rankings for these welfare outcomes.

**R1: Unconditional Welfare Outcomes**

We shall refer to our welfare indicator for country *i* in period *t* as $\Omega_{it}$. R1 is based on simply ranking these unconditional levels. We construct R1 for both welfare indicators, so a country has a higher R1 ranking if its life expectancy is higher, and if its child mortality rate is lower.

**R2: Controlling for Structural Features**

In moving to this ranking we want to take account of the factors that we would typically expect to be correlated with these welfare outcomes. Again, due to econometric issues such as the potential endogeneity of some of the regressors, we would not place too literal an interpretation on the regression that sets the OLS benchmark. Again, for purposes of forming the correct ranking across countries, these potential sources of bias in the actual estimates are unproblematic as long as these biases do not differ across countries. Hence, in order to construct to a ranking which accounts for these structural features in the cross-country data, we run a regression of the form:

$$(5)\ \Omega_{it} = \beta \mathbf{X}_{it} + \gamma \mathbf{Z}_i + v_{it}$$

where $\Omega_{it}$ refers to either of our welfare outcome measures of life expectancy or the IMR; $\mathbf{X}_{it}$ includes the real per capita GDP per capita, a measure of shocks to GDP per capita, the fraction of the population aged between15and 64, the fraction of the population residing in urban regions, and the levels of per capita expenditures on health and education; and $\mathbf{Z}_i$ is a set of regional dummies with Western Europe being the omitted category.

The inclusion of income per capita in the set of regressors proxies for the government budget constraints, shocks to GDP account for cyclical movements, the measures of working population and the level of urbanization are both included to proxy for poverty levels (and it is the potential endogeneity of these regressors that may concern us most). We include health and education spending as these types of safety net would be expected to alleviate lifetime poverty. It was decided not to include the other forms of safety net expenditures in order to maintain as large a sample as possible.

Again, we omit country fixed effects precisely because we wish to be able to shed light on how much country-specific factors derive from these structural features and how much they derive from institutional factors.

The residual estimated from (5) thus captures how much of the variability in the welfare indicator cannot be explained by controlling for structural factors alone. The rank R2 is then based upon the time-averaged residual from (5), $\bar{\hat{v}}_i$. The interpretation of this is as before—lower rankings (more negative residual) indicating that the country performs worse on the welfare rank than we would predict given its structural characteristics, where we are

comparing to the international benchmark as determined by how well countries are doing on average with regard to the same welfare indicator.

**R3: Controlling for Institutional Quality**
We now wish to construct R3 in order to assess how much of this unexplained component can in fact be accounted for by institutional features of the country. We do this by first regressing time-averaged residuals from (5) on the set of time-invariant cross-country quality-of-government measures discussed before:

$$(6)\ \bar{\hat{v}}_i = \beta Q_i + \omega_i$$

R3 is then based upon the residual from this regression,. interpreted as the amount of the welfare outcomes that cannot be accounted for by either structural features of the economy or institutional features. This can be positive or negative, the interpretation of which is exactly as before.

When we move to the analysis of welfare outcomes at the Indian state level, where we only have the welfare outcome of IMR, the set of structural factors we are able to control for in constructing R2 are: (i) safety net expenditures on health, education, social assistance, food subsidies, and calamities; (ii) state income per capita; (iii) urban and rural headcounts; (iv) rural and urban gini income inequality indices. In the construction of R3, we employ voter turnout, political competition, and literacy rates as our proxies for institutional quality. The interpretation of the three ranks is the same as that for the cross-country analysis.

## VI. Results

### *Cross-Country Analysis*

We now turn to the analysis of our results, where we shall essentially go through the estimation of equations (1) to (3) both for cross-country data and the Indian state-level data, and interpret the rankings, R1 to R3, derived from them. We begin with the cross-country analysis. All the data are from the *World Development Indicators* and the *IMF Government Finance Statistics Yearbook*, available over the period 1972–97, averaged over five-year time intervals.

Table 1 presents the levels of spending across countries for the two main types of safety nets that we consider, namely social spending and welfare, and transfers to organization and households, both as shares of total GDP. The table also gives the figures for health and education expenditures; discussion of these is in the appendix. There are two things of note in this table—first, the expenditure shares are broadly consistent with what we might have expected, with the shares of Western Europe and North America being the highest in most of the safety net categories, although when looking at the total size of the government sector, Eastern Europe and the Middle East spend shares comparable to those of developed countries. Secondly, there is much variation in the expenditure shares across countries, implying variation in the levels of expenditures across countries. This occurs both within and across each continent. This confirms our earlier point that, given such variation, there is clearly something to explain concerning the underlying determinants of such shares. In

constructing R2 and R3 we will be trying to account for these levels of variation by the structural and institutional features of the economy. There is sufficient variation in the data to shed some light in the course of this analysis on how much governments ought to spending.

**Table 1: Safety Net Expenditures as percentage of GDP**

| *Country* | *SS and Welfare* | *Transfers to Orgs/HH* | *Health* | *Education* | *Total Govt Exp* |
|---|---|---|---|---|---|
| Albania | 6.729 | 7.171 | 1.739 | 0.712 | 31.007 |
| Argentina | 5.673 | 6.159 | 0.274 | 0.922 | 13.947 |
| Australia | 6.836 | 7.297 | 2.638 | 1.784 | 23.666 |
| Austria | 16.822 | 16.448 | 4.695 | 3.594 | 37.232 |
| Bahamas | 1.167 | 1.346 | 3.067 | 3.771 | 19.267 |
| Bahrain | 0.855 | 0.642 | 2.607 | 3.988 | 32.171 |
| Barbados | 4.696 | | 3.707 | 6.131 | 30.902 |
| Belarus | 12.216 | 10.361 | 1.372 | 2.771 | 35.792 |
| Belgium | 20.028 | 23.281 | 0.864 | 6.888 | 48.450 |
| Belize | 1.310 | | 2.197 | 3.932 | 26.044 |
| Benin | 1.625 | | 1.097 | 3.424 | 17.706 |
| Bhutan | 0.622 | 0.729 | 2.357 | 3.908 | 36.060 |
| Bolivia | 3.534 | 2.643 | 0.960 | 3.562 | 18.764 |
| Brazil | 7.468 | 7.282 | 1.775 | 1.029 | 26.538 |
| Bulgaria | 11.074 | 11.089 | 1.271 | 1.601 | 45.872 |
| Burkina Faso | 0.463 | | 0.776 | 2.114 | 12.045 |
| Burundi | 1.191 | 1.390 | 1.142 | 4.153 | 24.268 |
| Cameroon | 0.890 | 1.096 | 0.787 | 2.621 | 18.556 |
| Canada | 8.266 | 9.388 | 1.419 | 0.791 | 22.751 |
| Central African Republic | 1.353 | | 1.119 | 3.877 | 22.001 |
| Chad | 0.199 | | 0.446 | 1.527 | 17.173 |
| Chile | 8.699 | | 2.341 | 3.929 | 27.671 |
| Colombia | 2.174 | 0.265 | 0.673 | 2.941 | 13.156 |
| Comoros | 0.017 | | 2.756 | 9.570 | 43.679 |
| Congo, Republic of | 1.763 | | 1.919 | 4.470 | 38.017 |
| Costa Rica | 4.086 | 6.341 | 4.865 | 5.204 | 24.041 |
| Cote d'Ivoire | 1.079 | 0.927 | 1.228 | 6.539 | 27.836 |
| Croatia | 14.104 | 12.032 | 6.695 | 2.800 | 43.661 |
| Cyprus | 6.532 | 7.644 | 1.980 | 3.555 | 32.261 |
| Czech Republic | 16.588 | 17.586 | 6.203 | 0.201 | 33.608 |
| Denmark | 15.139 | 7.030 | 0.965 | 4.079 | 37.179 |
| Djibouti | | | | | 34.685 |
| Dominica | 1.288 | | 3.578 | 4.890 | 35.094 |
| Dominican Republic | 0.830 | 0.150 | 1.603 | 1.910 | 15.561 |
| Egypt, Arab Republic of | 4.634 | 6.056 | 1.124 | 4.539 | 42.779 |
| Estonia | 9.712 | 12.283 | 4.665 | 2.828 | 30.437 |
| Ethiopia | 1.222 | 0.881 | 0.840 | 2.558 | 23.390 |
| Finland | 10.997 | | 2.484 | 4.247 | 32.137 |
| France | 17.973 | 22.119 | 6.774 | 3.304 | 41.312 |
| Gambia, The | 0.740 | 0.967 | 1.903 | 3.044 | 25.034 |
| Greece | 6.788 | 5.525 | 2.447 | 2.728 | 33.508 |
| Guatemala | 0.651 | | 0.853 | 1.663 | 11.612 |
| Guinea | | 0.461 | | | 21.923 |

| *Country* | *SS and Welfare* | *Transfers to Orgs/HH* | *Health* | *Education* | *Total Govt Exp* |
|---|---|---|---|---|---|
| Guinea Bissau | 1.944 | 0.684 | 3.555 | 4.699 | 52.123 |
| Guyana | 2.805 | | 3.111 | 6.360 | 62.661 |
| Haiti | 0.657 | | 1.077 | 1.243 | 16.935 |
| Honduras | 0.985 | | 1.828 | 3.277 | 16.233 |
| Hungary | 14.343 | 17.623 | 2.189 | 1.110 | 51.419 |
| Iceland | 5.375 | 6.463 | 6.150 | 3.619 | 28.997 |
| India | | | 0.240 | 0.297 | 13.504 |
| Indonesia | 0.954 | 0.883 | 0.410 | 1.615 | 18.590 |
| Iran, Islamic Republic | 2.307 | | 1.557 | 4.145 | 31.728 |
| Ireland | 11.814 | | 6.157 | 5.475 | 41.732 |
| Israel | 10.518 | 14.897 | 3.182 | 5.688 | 60.504 |
| Italy | 13.301 | 17.478 | 4.517 | 3.921 | 42.514 |
| Jamaica | 1.178 | 0.270 | 2.857 | 6.514 | 37.372 |
| Japan | 8.291 | 0.696 | 0.341 | 1.374 | 16.987 |
| Korea, Republic of | 1.217 | 2.500 | 0.211 | 2.987 | 16.512 |
| Kuwait | 4.661 | 9.071 | 2.507 | 4.840 | 46.505 |
| Latvia | 12.674 | 14.193 | 2.309 | 3.428 | 30.713 |
| Lebanon | 2.545 | 4.116 | 0.915 | 2.562 | 34.320 |
| Lesotho | 0.709 | 0.585 | 3.574 | 8.073 | 47.083 |
| Liberia | 0.294 | | 1.705 | 3.404 | 23.532 |
| Lithuania | 8.805 | 8.629 | 2.091 | 1.687 | 25.719 |
| Luxembourg | 19.320 | 20.283 | 0.890 | 3.531 | 39.879 |
| Madagascar | 0.611 | | 1.002 | 2.060 | 16.700 |
| Malaysia | 1.154 | 1.458 | 1.507 | 5.397 | 26.285 |
| Maldives | 1.806 | | 3.344 | 5.793 | 45.289 |
| Mali | 0.965 | 1.056 | 0.697 | 2.766 | 21.703 |
| Malta | 13.837 | 14.340 | 3.796 | 4.177 | 41.362 |
| Mauritania | 1.470 | | 1.157 | 4.001 | 43.003 |
| Mauritius | 4.159 | 3.802 | 1.895 | 3.471 | 22.977 |
| México | 2.880 | | 0.465 | 2.948 | 17.317 |
| Mongolia | 5.100 | 4.818 | 0.561 | 0.833 | 21.270 |
| Morocco | 1.885 | | 1.014 | 5.202 | 31.197 |
| Myanmar | 0.702 | | 0.828 | 1.794 | 13.924 |
| Namibia | | 1.451 | | | 37.222 |
| Nepal | 0.088 | | 0.719 | 1.751 | 15.098 |
| Netherlands | 18.587 | 22.913 | 6.223 | 6.073 | 50.275 |
| Netherlands Antilles | 7.502 | 6.595 | 1.679 | 1.339 | 25.805 |
| Nicaragua | 2.709 | 4.184 | 3.024 | 3.496 | 33.537 |
| Niger | 0.306 | | 0.713 | 2.889 | 16.529 |
| Norway | 12.306 | 14.100 | 2.251 | 2.420 | 35.837 |
| Pakistan | 0.419 | | 0.233 | 0.365 | 20.220 |
| Panama | 4.120 | 6.147 | 4.707 | 4.870 | 28.608 |
| Paraguay | 2.112 | 1.475 | 0.443 | 1.444 | 10.752 |
| Peru | | 2.210 | 0.950 | 3.121 | 16.239 |
| Poland | 21.358 | 15.718 | 4.375 | 3.095 | 42.740 |
| Portugal | 7.828 | 9.907 | 2.454 | 3.156 | 37.472 |
| Romania | 7.865 | 10.630 | 1.394 | 1.923 | 38.113 |
| Russian Federation | 7.386 | 7.222 | 0.406 | 0.722 | 26.291 |
| Rwanda | 0.319 | 1.051 | 0.715 | 2.754 | 16.170 |

| *Country* | *SS and Welfare* | *Transfers to Orgs/HH* | *Health* | *Education* | *Total Govt Exp* |
|---|---|---|---|---|---|
| Senegal | 1.163 | | 1.125 | 4.225 | 21.394 |
| Seychelles | 8.494 | 7.893 | 4.479 | 6.554 | 57.140 |
| Singapore | 0.511 | 1.684 | 1.315 | 3.696 | 20.350 |
| South Africa | 1.652 | 1.702 | 0.555 | 1.897 | 28.546 |
| Spain | 13.166 | 14.154 | 1.579 | 1.783 | 28.302 |
| Sri Lanka | 4.537 | 4.624 | 1.520 | 2.741 | 28.948 |
| St. Kitts | 2.805 | 1.990 | 3.640 | 5.174 | 30.244 |
| St. Lucia | 1.461 | 2.200 | 3.363 | 6.809 | 30.290 |
| Suriname | 2.755 | | 2.178 | 6.341 | 41.374 |
| Sweden | 18.780 | 21.316 | 0.676 | 3.596 | 39.769 |
| Switzerland | 10.152 | 10.506 | 3.039 | 0.667 | 20.955 |
| Syrian Arab Republic | 1.417 | | 0.488 | 2.780 | 32.734 |
| Thailand | 0.587 | 0.597 | 0.972 | 3.417 | 16.710 |
| Togo | 2.212 | 0.186 | 1.764 | 5.355 | 35.686 |
| Tonga | 0.473 | | 3.578 | 5.450 | 43.054 |
| Trinidad and Tobago | 2.616 | 5.264 | 2.020 | 3.776 | 29.218 |
| Tunisia | 3.949 | 6.820 | 2.148 | 5.958 | 32.275 |
| Turkey | 0.538 | | 0.523 | 3.122 | 20.292 |
| United Kingdom | 10.513 | 12.622 | 5.020 | 1.094 | 37.777 |
| United States | 14.122 | 14.786 | 1.254 | 2.182 | 26.738 |
| Uzbekistan | 6.817 | 9.403 | 2.879 | 0.502 | |
| Virgin Islands (U.S.) | 1.333 | | 1.847 | 3.576 | |
| West Bank and Gaza | 0.275 | 0.704 | 3.324 | 6.623 | |
| Yemen | | 2.863 | 1.644 | 7.692 | |
| Yugoslavia | | 1.722 | 1.169 | 5.776 | |
| Latin America and the Caribbean | 2.913 | 3.273 | 2.209 | 3.727 | 24.937 |
| Sub-Saharan Africa | 1.443 | 1.525 | 1.582 | 4.093 | 28.597 |
| North America | 11.194 | 12.087 | 1.336 | 1.486 | 24.744 |
| Western Europe | 13.566 | 14.792 | 3.495 | 3.376 | 36.551 |
| South Asia | 1.494 | 2.677 | 1.402 | 2.476 | 26.520 |
| Middle East and North Africa | 4.661 | 6.725 | 1.846 | 4.779 | 38.363 |
| East and Central Europe | 10.307 | 11.662 | 2.882 | 2.164 | 34.186 |
| East Asia and Pacific | 2.373 | 2.293 | 1.426 | 3.179 | 22.902 |
| World average | 5.494 | 6.998 | 2.139 | 3.493 | 30.060 |
| Standard deviation | 5.606 | 6.382 | 1.570 | 1.873 | 11.399 |

*Note*: Figures represent averages of five-year period averages for spending data from 1972-1997. Blank cells indicate data not available.
ss = social security
Orgs/HH = Organizations or households

*Source:IMF Government Finance Statistics Yearbook.* All years, 1972-1997.

## R1: Unconditional Safety Net Expenditures

R1 is constructed from the ranking of the unconditional share of GDP of each type of social expenditure. This is given in table 2a. What we notice is that, following from table 1, it is the developed economies that unconditionally spend the highest shares of GDP on each type of

safety net, although notable exceptions include Guyana, which actually has the highest share of government expenditures out of GDP in our data set, followed by Israel. In terms of neighboring countries, we find that, for instance, Sri Lanka and Pakistan have large differences in the shares of GDP they devote to social security; Mexico and Brazil have dramatic differences in terms of social security, as do Jamaica and Trinidad and Tobago in transfers to organizations and households.

To see how much of these variations can be explained by structural and institutional factors, we then run regression (1), controlling for structural factors. This leads to the construction of the second ranking, R2.

**R2: Controlling for Structural Features**

We now control for structural features of the economy discussed earlier, namely, the log of per capita income (this enters in logarithmic form because we expect there to be diminishing marginal benefits of safety nets as income rises), shocks to income (as a proxy for business cycle effects), the fraction of the population of working age, the level of urbanization, and regional dummies. Having run this regression, which is reported in table 3, we obtain a residual which captures the unexplained component of safety net expenditures, controlling for these structural features. Taking the time average of the residuals for each country, we obtain the basis of R2, the ranking of countries controlling for structural characteristics.

From table 2 we can see that most of the movement across countries moving from R1 to R2 is at the lower ranks of R1, i.e., having controlled for structural features, the countries that had the highest unconditional rank of social expenditures, still tend to have the highest ranks. However, there are some notable exceptions. Switzerland, Israel, and Cyprus both have large falls in their ranks moving to R2, implying that, according to the international benchmark of what the average country spends on safety nets given its structural characteristics, these countries spend less than we would predict. Conversely, Nicaragua and Indonesia improve their rankings moving to R2, implying that their performance relative to the international benchmark improves when taking account of their structural characteristics, i.e., the level of need and the ability to finance social expenditures.

**R3: Controlling for Institutional Quality**

We now examine how much of the unexplained residual from (1) can be explained by country-specific institutional factors. In order to do this, we run regression (2), obtain the residual, $\hat{\omega}_{ij}$ and then rank this to form R3. Again, we observe less variation for the countries ranked highest than for those below them. For social security, there are some dramatic falls for countries such as Denmark, Korea, and Honduras, implying that controlling for both institutional quality and structural features, they perform worse relative to regional norms than when only structural characteristics are controlled for. Other countries, such as Chile, Egypt, and Brazil improve their level of relative performance with respect to expenditures on social security. In terms of transfers, Paraguay and Mali do worse when we move to R3, indicating that, relative to the benchmark, these countries would appear to spend less than we would expect controlling for institutions and structure. Hence, this evidence may suggest that such countries ought to spend more on safety nets, all else equal.

# Table 2a: Spending On Social Safety Nets (SS/GDP)

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Belgium | 1 | 1 | 1 | Belgium | 1 | 3 | 5 | France | 1 | 2 | 2 | Belgium | 1 | 1 | 2 | Guyana | 1 | 2 | 1 |
| Luxembourg | 2 | 12 | 19 | Netherlands | 2 | 1 | 1 | Netherlands | 2 | 3 | 3 | Cote d'Ivoire | 2 | 5 | 3 | Israel | 2 | 1 | 2 |
| Sweden | 3 | 7 | 7 | France | 3 | 2 | 3 | Germany | 3 | 4 | 5 | Jamaica | 3 | 4 | 8 | Guinea-Bissau | 3 | 3 | 3 |
| Netherlands | 4 | 2 | 5 | Sweden | 4 | 4 | 4 | Ireland | 4 | 1 | 1 | Guyana | 4 | 3 | 1 | Netherlands | 4 | 4 | 7 |
| France | 5 | 4 | 3 | Luxembourg | 5 | 32 | 27 | Iceland | 5 | 5 | 7 | Suriname | 5 | 13 | 7 | Belgium | 5 | 6 | 8 |
| Austria | 6 | 6 | 4 | Austria | 6 | 8 | 11 | United Kingdom | 6 | 8 | 6 | Netherlands | 6 | 2 | 6 | Kuwait | 6 | 33 | 32 |
| Germany | 7 | 10 | 9 | Poland | 7 | 6 | 10 | Costa Rica | 7 | 9 | 12 | Tunisia | 7 | 7 | 11 | Egypt, Arab Rep. | 7 | 8 | 5 |
| Denmark | 8 | 13 | 10 | Israel | 8 | 16 | 12 | Panama | 8 | 6 | 4 | Israel | 8 | 10 | 13 | Poland | 8 | 5 | 4 |
| Uruguay | 9 | 3 | 2 | Uruguay | 9 | 5 | 2 | Austria | 9 | 14 | 13 | Ireland | 9 | 8 | 4 | Italy | 9 | 14 | 23 |
| Malta | 10 | 5 | 6 | Spain | 10 | 11 | 9 | Italy | 10 | 10 | 8 | Malaysia | 10 | 11 | 16 | Ireland | 10 | 15 | 21 |
| Italy | 11 | 16 | 26 | Norway | 11 | 34 | 30 | Malta | 11 | 11 | 10 | Togo | 11 | 12 | 23 | Suriname | 11 | 16 | 11 |
| Spain | 12 | 8 | 18 | United Kingdom | 12 | 14 | 19 | Guinea-Bissau | 12 | 7 | 9 | Costa Rica | 12 | 14 | 12 | Malta | 12 | 13 | 20 |
| Norway | 13 | 51 | 39 | Switzerland | 13 | 43 | 45 | Israel | 13 | 27 | 19 | Morocco | 13 | 15 | 14 | France | 13 | 18 | 13 |
| Ireland | 14 | 14 | 15 | Portugal | 14 | 10 | 14 | Guyana | 14 | 13 | 11 | Zimbabwe | 14 | 16 | 19 | Luxembourg | 14 | 46 | 58 |
| Finland | 15 | 60 | 60 | United States | 15 | 31 | 35 | Switzerland | 15 | 46 | 44 | Panama | 15 | 20 | 18 | Sweden | 15 | 39 | 39 |
| Israel | 16 | 26 | 47 | Canada | 16 | 39 | 41 | Nicaragua | 16 | 12 | 16 | Kuwait | 16 | 9 | 10 | Romania | 16 | 19 | 16 |
| United Kingdom | 17 | 23 | 23 | Cyprus | 17 | 24 | 25 | United States | 17 | 31 | 24 | Guinea-Bissau | 17 | 18 | 20 | Congo, Rep. | 17 | 7 | 6 |
| Switzerland | 18 | 68 | 64 | Australia | 18 | 48 | 47 | Jamaica | 18 | 15 | 14 | Egypt, Arab Rep. | 18 | 17 | 9 | United Kingdom | 18 | 20 | 22 |
| Chile | 19 | 19 | 14 | Brazil | 19 | 7 | 8 | Australia | 19 | 32 | 34 | Congo, Rep. | 19 | 22 | 21 | Portugal | 19 | 17 | 19 |
| Japan | 20 | 35 | 56 | Denmark | 20 | 46 | 44 | Kuwait | 20 | 24 | 21 | Finland | 20 | 19 | 15 | Jamaica | 20 | 12 | 18 |
| Canada | 21 | 65 | 63 | Tunisia | 21 | 12 | 16 | Finland | 21 | 44 | 50 | Senegal | 21 | 38 | 28 | Austria | 21 | 37 | 36 |
| Romania | 22 | 17 | 11 | Iceland | 22 | 47 | 48 | Portugal | 22 | 26 | 37 | Malta | 22 | 27 | 35 | Denmark | 22 | 36 | 33 |
| Portugal | 23 | 21 | 24 | Costa Rica | 23 | 13 | 21 | Greece | 23 | 30 | 41 | Iran, Islamic Rep. | 23 | 23 | 17 | Norway | 23 | 41 | 42 |
| Brazil | 24 | 9 | 12 | Argentina | 24 | 27 | 33 | Chile | 24 | 16 | 28 | Denmark | 24 | 24 | 26 | Togo | 24 | 11 | 12 |
| Australia | 25 | 70 | 69 | Panama | 25 | 15 | 6 | Norway | 25 | 51 | 42 | Chile | 25 | 26 | 29 | Gabon | 25 | 9 | 9 |
| United States | 26 | 64 | 55 | Egypt, Arab Rep. | 26 | 18 | 13 | Suriname | 26 | 28 | 20 | Italy | 26 | 21 | 32 | Nicaragua | 26 | 22 | 15 |
| Greece | 27 | 43 | 40 | Greece | 27 | 36 | 18 | Tunisia | 27 | 18 | 23 | Trinidad and Tobago | 27 | 31 | 41 | Greece | 27 | 21 | 10 |
| Cyprus | 28 | 50 | 49 | Trinidad and Tobago | 28 | 40 | 38 | Trinidad and Tobago | 28 | 38 | 46 | Singapore | 28 | 32 | 27 | Germany | 28 | 40 | 45 |
| Argentina | 29 | 49 | 48 | Sri Lanka | 29 | 9 | 7 | Cyprus | 29 | 55 | 63 | Iceland | 29 | 34 | 38 | Syrian Arab Republic | 29 | 23 | 28 |
| Iceland | 30 | 71 | 72 | Nicaragua | 30 | 17 | 17 | Congo, Rep. | 30 | 20 | 31 | Sweden | 30 | 25 | 25 | Tunisia | 30 | 26 | 24 |
| Kuwait | 31 | 74 | 74 | Korea, Rep. | 31 | 44 | 43 | Gambia, The | 31 | 22 | 15 | Austria | 31 | 33 | 30 | Cyprus | 31 | 34 | 30 |
| Egypt, Arab Rep. | 32 | 25 | 17 | Peru | 32 | 35 | 39 | Venezuela RB | 32 | 36 | 39 | Venezuela RB | 32 | 30 | 24 | Finland | 32 | 57 | 49 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Sri Lanka | 33 | 15 | 21 | South Africa | 33 | 29 | 23 | Honduras | 33 | 21 | 17 | Cyprus | 33 | 41 | 34 | Iran, Islamic Rep. | 33 | 30 | 25 |
| Panama | 34 | 33 | 22 | Paraguay | 34 | 33 | 34 | Brazil | 34 | 33 | 40 | Luxembourg | 34 | 28 | 36 | Morocco | 34 | 25 | 26 |
| Costa Rica | 35 | 36 | 43 | Malaysia | 35 | 37 | 31 | Zimbabwe | 35 | 23 | 29 | Nicaragua | 35 | 36 | 40 | Trinidad and Tobago | 35 | 44 | 44 |
| Tunisia | 36 | 38 | 31 | Cameroon | 36 | 30 | 22 | Togo | 36 | 17 | 22 | Thailand | 36 | 35 | 49 | Iceland | 36 | 54 | 55 |
| Mexico | 37 | 58 | 65 | Mali | 37 | 21 | 20 | Dominican Republic | 37 | 35 | 43 | France | 37 | 29 | 22 | Sri Lanka | 37 | 24 | 35 |
| Guyana | 38 | 44 | 41 | Gambia, The | 38 | 23 | 15 | Spain | 38 | 62 | 65 | Honduras | 38 | 40 | 48 | Panama | 38 | 31 | 17 |
| Suriname | 39 | 56 | 58 | Cote d'Ivoire | 39 | 19 | 32 | Iran, Islamic Rep. | 39 | 34 | 32 | Portugal | 39 | 39 | 44 | South Africa | 39 | 27 | 27 |
| Nicaragua | 40 | 28 | 38 | Indonesia | 40 | 22 | 36 | Sri Lanka | 40 | 29 | 25 | Turkey | 40 | 37 | 47 | Spain | 40 | 52 | 61 |
| Trinidad and Tobago | 41 | 69 | 71 | Japan | 41 | 45 | 40 | Malaysia | 41 | 47 | 33 | Peru | 41 | 42 | 56 | Cote d'Ivoire | 41 | 28 | 34 |
| Iran, Islamic Rep. | 42 | 52 | 45 | Guinea-Bissau | 42 | 20 | 24 | Canada | 42 | 66 | 69 | Gambia, The | 42 | 57 | 60 | Zimbabwe | 42 | 35 | 38 |
| Togo | 43 | 22 | 29 | Thailand | 43 | 26 | 26 | Romania | 43 | 68 | 70 | Korea, Rep. | 43 | 44 | 43 | Chile | 43 | 43 | 40 |
| Colombia | 44 | 57 | 57 | Guinea | 44 | 25 | 28 | Singapore | 44 | 59 | 61 | Mexico | 44 | 45 | 53 | Uruguay | 44 | 45 | 37 |
| Paraguay | 45 | 45 | 53 | Gabon | 45 | 41 | 42 | Uruguay | 45 | 56 | 51 | Colombia | 45 | 43 | 33 | Brazil | 45 | 29 | 29 |
| Guinea-Bissau | 46 | 18 | 16 | Jamaica | 46 | 38 | 37 | Cote d'Ivoire | 46 | 39 | 45 | Niger | 46 | 53 | 37 | Malaysia | 46 | 32 | 41 |
| Morocco | 47 | 37 | 36 | Colombia | 47 | 42 | 46 | Senegal | 47 | 40 | 30 | Syrian Arab Republic | 47 | 46 | 45 | Gambia, The | 47 | 49 | 53 |
| Congo, Rep. | 48 | 46 | 37 | Togo | 48 | 28 | 29 | Egypt, Arab Rep. | 48 | 42 | 38 | Mali | 48 | 48 | 57 | Costa Rica | 48 | 47 | 46 |
| South Africa | 49 | 59 | 54 | | | | | Haiti | 49 | 43 | 35 | Sri Lanka | 49 | 49 | 62 | Australia | 49 | 73 | 68 |
| Syrian Arab Republic | 50 | 55 | 50 | | | | | Morocco | 50 | 49 | 52 | Greece | 50 | 47 | 31 | Ethiopia | 50 | 38 | 31 |
| Zimbabwe | 51 | 39 | 52 | | | | | Madagascar | 51 | 37 | 27 | Cameroon | 51 | 55 | 46 | Canada | 51 | 69 | 71 |
| Venezuela RB | 52 | 72 | 70 | | | | | Thailand | 52 | 61 | 55 | Ethiopia | 52 | 50 | 54 | United States | 52 | 61 | 54 |
| Ethiopia | 53 | 11 | 8 | | | | | Denmark | 53 | 71 | 66 | Norway | 53 | 54 | 39 | Guinea | 53 | 42 | 51 |
| Korea, Rep. | 54 | 67 | 68 | | | | | Peru | 54 | 57 | 59 | Uruguay | 54 | 62 | 52 | Mali | 54 | 50 | 60 |
| Jamaica | 55 | 61 | 67 | | | | | Luxembourg | 55 | 75 | 73 | Burkina Faso | 55 | 60 | 58 | Senegal | 55 | 56 | 50 |
| Senegal | 56 | 42 | 25 | | | | | Belgium | 56 | 70 | 75 | Madagascar | 56 | 58 | 55 | Switzerland | 56 | 79 | 78 |
| Malaysia | 57 | 62 | 66 | | | | | Guatemala | 57 | 58 | 57 | Romania | 57 | 73 | 65 | Singapore | 57 | 70 | 65 |
| Cote d'Ivoire | 58 | 32 | 35 | | | | | Ethiopia | 58 | 25 | 47 | Dominican Republic | 58 | 64 | 61 | Turkey | 58 | 55 | 57 |
| Honduras | 59 | 48 | 46 | | | | | Cameroon | 59 | 50 | 53 | South Africa | 59 | 66 | 59 | Pakistan | 59 | 51 | 52 |
| Mali | 60 | 27 | 34 | | | | | Burkina Faso | 60 | 41 | 56 | Australia | 60 | 56 | 50 | Venezuela RB | 60 | 72 | 69 |
| Indonesia | 61 | 40 | 27 | | | | | Niger | 61 | 48 | 36 | Spain | 61 | 61 | 66 | Indonesia | 61 | 48 | 43 |
| Cameroon | 62 | 47 | 42 | | | | | Mali | 62 | 45 | 26 | Guatemala | 62 | 68 | 72 | Cameroon | 62 | 58 | 48 |
| Dominican Republic | 63 | 66 | 62 | | | | | Sweden | 63 | 74 | 72 | Indonesia | 63 | 52 | 42 | Mexico | 63 | 65 | 70 |
| Gambia, The | 64 | 29 | 32 | | | | | Colombia | 64 | 60 | 67 | Paraguay | 64 | 69 | 70 | Japan | 64 | 63 | 66 |
| Haiti | 65 | 41 | 33 | | | | | South Africa | 65 | 69 | 49 | Japan | 65 | 59 | 67 | Haiti | 65 | 62 | 59 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Guatemala | 66 | 54 | 51 | | | | | Turkey | 66 | 64 | 68 | Congo, Dem. Rep. | 66 | 63 | 64 | Thailand | 66 | 60 | 63 |
| Madagascar | 67 | 30 | 28 | | | | | Syrian Arab Republic | 67 | 63 | 54 | Haiti | 67 | 72 | 69 | Madagascar | 67 | 64 | 62 |
| Thailand | 68 | 53 | 61 | | | | | Mexico | 68 | 67 | 64 | United Kingdom | 68 | 67 | 73 | Niger | 68 | 53 | 47 |
| Turkey | 69 | 63 | 59 | | | | | Paraguay | 69 | 65 | 62 | Brazil | 69 | 65 | 63 | Korea, Rep. | 69 | 68 | 72 |
| Singapore | 70 | 73 | 73 | | | | | Indonesia | 70 | 54 | 60 | Argentina | 70 | 74 | 68 | Peru | 70 | 67 | 77 |
| Burkina Faso | 71 | 34 | 44 | | | | | Japan | 71 | 76 | 76 | Canada | 71 | 70 | 71 | Honduras | 71 | 66 | 67 |
| Pakistan | 72 | 31 | 30 | | | | | Argentina | 72 | 72 | 74 | Switzerland | 72 | 75 | 74 | Dominican Republic | 72 | 71 | 74 |
| Niger | 73 | 24 | 13 | | | | | India | 73 | 19 | 18 | United States | 73 | 51 | 51 | Argentina | 73 | 75 | 75 |
| Congo, Dem. Rep. | 74 | 20 | 20 | | | | | Pakistan | 74 | 53 | 48 | Pakistan | 74 | 76 | 76 | India | 74 | 10 | 14 |
| | | | | | | | | Congo, Dem. Rep. | 75 | 52 | 58 | India | 75 | 6 | 5 | Congo, Dem. Rep. | 75 | 59 | 56 |
| | | | | | | | | Korea, Rep. | 76 | 73 | 71 | Germany | 76 | 71 | 75 | Colombia | 76 | 76 | 73 |
| | | | | | | | | | | | | | | | | Burkina Faso | 77 | 74 | 64 |
| | | | | | | | | | | | | | | | | Guatemala | 78 | 77 | 76 |
| | | | | | | | | | | | | | | | | Paraguay | 79 | 78 | 79 |
| *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | |
| | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 |
| rank1 | 1 | | | rank1 | 1 | | | rank1 | 1 | | | rank1 | 1 | | | rank1 | 1 | | |
| rank2 | .3931 | 1 | | rank2 | .5488 | 1 | | rank2 | .9064 | 1 | | rank2 | .7470 | 1 | | rank2 | .8058 | 1 | |
| rank3 | .3388 | .9468 | 1 | rank3 | .5486 | .9565 | 1 | rank3 | .8792 | .9591 | 1 | rank3 | .6957 | .9480 | 1 | rank3 | .8071 | .9872 | 1 |
| *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | |
| rank1=rank2 | .9063 | | | rank1=rank2 | | | | rank1=rank2 | .0139 | | | rank1=rank2 | .2888 | | | rank1=rank2 | .2007 | | |
| rank2=rank3 | .7122 | | | rank2=rank3 | | | | rank2=rank3 | 1 | | | rank2=rank3 | 1 | | | rank2=rank3 | .7163 | | |

Orgs and HH = Organizations and households.

## Table 2b: Spending On Social Safety Nets (SS/Total Expenditure)

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Uruguay | 1 | 1 | 1 | Uruguay | 1 | 2 | 1 | Iceland | 1 | 1 | 1 | Cote d'Ivoire | 1 | 2 | 2 |
| Germany | 2 | 7 | 8 | France | 2 | 3 | 10 | Costa Rica | 2 | 2 | 3 | Costa Rica | 2 | 1 | 4 |
| Luxembourg | 3 | 14 | 18 | Luxembourg | 3 | 36 | 26 | Germany | 3 | 4 | 4 | Colombia | 3 | 3 | 1 |
| Switzerland | 4 | 15 | 12 | Sweden | 4 | 8 | 8 | Panama | 4 | 3 | 2 | Malaysia | 4 | 14 | 13 |
| Spain | 5 | 2 | 2 | Argentina | 5 | 1 | 2 | France | 5 | 5 | 6 | Honduras | 5 | 10 | 10 |
| Sweden | 6 | 5 | 9 | Netherlands | 6 | 12 | 6 | Switzerland | 6 | 11 | 12 | Thailand | 6 | 6 | 15 |
| Austria | 7 | 4 | 3 | Belgium | 7 | 14 | 15 | Ireland | 7 | 9 | 7 | Jamaica | 7 | 16 | 14 |
| France | 8 | 13 | 13 | Austria | 8 | 4 | 7 | United Kingdom | 8 | 8 | 10 | Tunisia | 8 | 13 | 21 |
| Belgium | 9 | 17 | 11 | United States | 9 | 16 | 18 | United States | 9 | 12 | 14 | Senegal | 9 | 18 | 7 |
| Argentina | 10 | 3 | 4 | Spain | 10 | 7 | 4 | Austria | 10 | 20 | 15 | Peru | 10 | 11 | 12 |
| Denmark | 11 | 16 | 10 | Switzerland | 11 | 24 | 30 | Netherlands | 11 | 13 | 11 | Zimbabwe | 11 | 21 | 20 |
| Japan | 12 | 20 | 28 | Norway | 12 | 32 | 37 | Italy | 12 | 16 | 9 | Singapore | 12 | 5 | 5 |
| Netherlands | 13 | 28 | 39 | Canada | 13 | 21 | 29 | Honduras | 13 | 7 | 5 | Mexico | 13 | 22 | 17 |
| Canada | 14 | 22 | 22 | Poland | 14 | 15 | 21 | Australia | 14 | 15 | 23 | Korea, Rep. | 14 | 15 | 11 |
| Norway | 15 | 47 | 43 | United Kingdom | 15 | 22 | 20 | Nicaragua | 15 | 6 | 18 | Venezuela RB | 15 | 4 | 3 |
| Italy | 16 | 36 | 49 | Australia | 16 | 41 | 42 | Dominican Republic | 16 | 10 | 17 | Burkina Faso | 16 | 17 | 29 |
| Malta | 17 | 8 | 5 | Israel | 17 | 42 | 40 | Venezuela RB | 17 | 14 | 22 | Niger | 17 | 37 | 23 |
| Finland | 18 | 51 | 57 | Portugal | 18 | 11 | 12 | Malta | 18 | 19 | 13 | Panama | 18 | 31 | 37 |
| Chile | 19 | 6 | 6 | Panama | 19 | 5 | 3 | Chile | 19 | 18 | 32 | Morocco | 19 | 24 | 24 |
| United States | 20 | 55 | 37 | Brazil | 20 | 10 | 14 | Portugal | 20 | 43 | 50 | Guatemala | 20 | 35 | 33 |
| Australia | 21 | 59 | 61 | Cyprus | 21 | 20 | 36 | Guatemala | 21 | 24 | 26 | Turkey | 21 | 20 | 18 |
| Brazil | 22 | 10 | 15 | Costa Rica | 22 | 6 | 9 | Jamaica | 22 | 23 | 16 | Togo | 22 | 38 | 51 |
| United Kingdom | 23 | 45 | 38 | Iceland | 23 | 46 | 47 | Finland | 23 | 30 | 45 | Suriname | 23 | 32 | 25 |
| Ireland | 24 | 49 | 55 | Tunisia | 24 | 13 | 11 | Greece | 24 | 31 | 53 | Iran, Islamic Rep. | 24 | 27 | 19 |
| Portugal | 25 | 24 | 27 | Trinidad and Tobago | 25 | 38 | 27 | Gambia, The | 25 | 17 | 8 | Mali | 25 | 30 | 38 |
| Greece | 26 | 39 | 63 | Egypt, Arab Rep. | 26 | 18 | 24 | Trinidad and Tobago | 26 | 34 | 49 | Cameroon | 26 | 45 | 48 |
| Romania | 27 | 18 | 17 | Denmark | 27 | 47 | 45 | Guinea-Bissau | 27 | 21 | 30 | Belgium | 27 | 12 | 31 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Cyprus | 28 | 52 | 62 | Greece | 28 | 37 | 38 | Singapore | 28 | 40 | 51 | Nicaragua | 28 | 39 | 50 |
| Paraguay | 29 | 12 | 14 | Sri Lanka | 29 | 9 | 5 | Tunisia | 29 | 28 | 43 | Chile | 29 | 25 | 34 |
| Iceland | 30 | 72 | 72 | Korea, Rep. | 30 | 40 | 41 | Norway | 30 | 52 | 40 | Finland | 30 | 9 | 6 |
| Mexico | 31 | 38 | 51 | Paraguay | 31 | 17 | 17 | Brazil | 31 | 36 | 36 | Paraguay | 31 | 53 | 49 |
| Israel | 32 | 69 | 70 | Peru | 32 | 26 | 22 | Burkina Faso | 32 | 22 | 46 | Trinidad and Tobago | 32 | 28 | 53 |
| Costa Rica | 33 | 23 | 29 | Nicaragua | 33 | 19 | 23 | Zimbabwe | 33 | 27 | 29 | Iceland | 33 | 26 | 41 |
| Sri Lanka | 34 | 11 | 16 | Gambia, The | 34 | 23 | 13 | Canada | 34 | 54 | 56 | Dominican Republic | 34 | 44 | 44 |
| Colombia | 35 | 43 | 45 | Cameroon | 35 | 29 | 28 | Cyprus | 35 | 62 | 64 | Madagascar | 35 | 47 | 45 |
| Panama | 36 | 34 | 32 | Malaysia | 36 | 39 | 33 | Haiti | 36 | 29 | 27 | Netherlands | 36 | 23 | 28 |
| Tunisia | 37 | 44 | 24 | Indonesia | 37 | 35 | 43 | Madagascar | 37 | 25 | 21 | Gambia, The | 37 | 56 | 55 |
| Nicaragua | 38 | 19 | 30 | South Africa | 38 | 34 | 32 | Kuwait | 38 | 44 | 37 | Ireland | 38 | 42 | 26 |
| Egypt, Arab Rep. | 39 | 33 | 35 | Japan | 39 | 48 | 46 | Malaysia | 39 | 53 | 31 | Kuwait | 39 | 8 | 9 |
| Kuwait | 40 | 73 | 74 | Mali | 40 | 27 | 16 | Thailand | 40 | 51 | 48 | Denmark | 40 | 34 | 42 |
| Trinidad and Tobago | 41 | 68 | 68 | Cote d'Ivoire | 41 | 25 | 34 | Suriname | 41 | 37 | 33 | Guyana | 41 | 50 | 30 |
| Iran, Islamic Rep. | 42 | 54 | 56 | Thailand | 42 | 31 | 19 | Peru | 42 | 46 | 34 | Ethiopia | 42 | 62 | 71 |
| Korea, Rep. | 43 | 70 | 69 | Guinea | 43 | 30 | 31 | Israel | 43 | 65 | 44 | Cyprus | 43 | 55 | 47 |
| Suriname | 44 | 60 | 65 | Colombia | 44 | 45 | 48 | Iran, Islamic Rep. | 44 | 39 | 35 | Egypt, Arab Rep. | 44 | 43 | 39 |
| Venezuela RB | 45 | 71 | 71 | Gabon | 45 | 44 | 44 | Sri Lanka | 45 | 41 | 28 | Congo, Rep. | 45 | 61 | 58 |
| Togo | 46 | 25 | 21 | Guinea-Bissau | 46 | 28 | 35 | Senegal | 46 | 26 | 25 | Italy | 46 | 33 | 32 |
| Guatemala | 47 | 53 | 42 | Jamaica | 47 | 43 | 39 | Togo | 47 | 35 | 38 | Portugal | 47 | 59 | 62 |
| Morocco | 48 | 50 | 47 | Togo | 48 | 33 | 25 | Guyana | 48 | 38 | 19 | Malta | 48 | 51 | 56 |
| Honduras | 49 | 35 | 33 | | | | | Colombia | 49 | 45 | 54 | Congo, Dem. Rep. | 49 | 48 | 52 |
| Indonesia | 50 | 58 | 52 | | | | | Spain | 50 | 63 | 55 | Israel | 50 | 54 | 57 |
| South Africa | 51 | 66 | 64 | | | | | Cote d'Ivoire | 51 | 48 | 41 | Sri Lanka | 51 | 65 | 68 |
| Dominican Republic | 52 | 61 | 54 | | | | | Uruguay | 52 | 55 | 62 | Austria | 52 | 46 | 36 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Ethiopia | 53 | 9 | 7 | | | | | Congo, Rep. | 53 | 49 | 57 | Sweden | 53 | 29 | 22 |
| Zimbabwe | 54 | 42 | 48 | | | | | Niger | 54 | 47 | 39 | Greece | 54 | 58 | 54 |
| Senegal | 55 | 40 | 31 | | | | | Cameroon | 55 | 50 | 58 | Luxembourg | 55 | 19 | 16 |
| Cameroon | 56 | 48 | 53 | | | | | Paraguay | 56 | 57 | 42 | Guinea-Bissau | 56 | 70 | 69 |
| Guyana | 57 | 56 | 50 | | | | | Romania | 57 | 69 | 73 | Syrian Arab Republic | 57 | 63 | 59 |
| Mali | 58 | 27 | 19 | | | | | Mali | 58 | 42 | 20 | Indonesia | 58 | 52 | 46 |
| Malaysia | 59 | 65 | 66 | | | | | Ethiopia | 59 | 33 | 65 | Uruguay | 59 | 64 | 64 |
| Burkina Faso | 60 | 26 | 44 | | | | | Morocco | 60 | 61 | 63 | France | 60 | 40 | 27 |
| Cote d'Ivoire | 61 | 46 | 41 | | | | | Mexico | 61 | 64 | 47 | Australia | 61 | 36 | 35 |
| Congo, Rep. | 62 | 57 | 58 | | | | | Denmark | 62 | 70 | 69 | Argentina | 62 | 69 | 60 |
| Guinea-Bissau | 63 | 21 | 23 | | | | | Egypt, Arab Rep. | 63 | 56 | 60 | Norway | 63 | 49 | 40 |
| Syrian Arab Republic | 64 | 62 | 46 | | | | | Turkey | 64 | 66 | 70 | Haiti | 64 | 73 | 74 |
| Madagascar | 65 | 32 | 26 | | | | | Luxembourg | 65 | 75 | 67 | Spain | 65 | 57 | 61 |
| Haiti | 66 | 41 | 40 | | | | | Indonesia | 66 | 59 | 68 | South Africa | 66 | 74 | 70 |
| Thailand | 67 | 63 | 59 | | | | | Argentina | 67 | 68 | 74 | Japan | 67 | 60 | 66 |
| Jamaica | 68 | 64 | 67 | | | | | South Africa | 68 | 72 | 59 | Romania | 68 | 76 | 73 |
| Gambia, The | 69 | 29 | 25 | | | | | Sweden | 69 | 74 | 71 | Brazil | 69 | 72 | 72 |
| Singapore | 70 | 74 | 73 | | | | | India | 70 | 32 | 24 | Canada | 70 | 66 | 65 |
| Turkey | 71 | 67 | 60 | | | | | Belgium | 71 | 73 | 76 | Switzerland | 71 | 67 | 63 |
| Pakistan | 72 | 37 | 36 | | | | | Congo, Dem. Rep. | 72 | 58 | 66 | United Kingdom | 72 | 71 | 75 |
| Niger | 73 | 30 | 20 | | | | | Syrian Arab Republic | 73 | 67 | 61 | United States | 73 | 41 | 43 |
| Congo, Dem. Rep. | 74 | 31 | 34 | | | | | Japan | 74 | 76 | 75 | India | 74 | 7 | 8 |
| | | | | | | | | Pakistan | 75 | 60 | 52 | Pakistan | 75 | 75 | 76 |
| | | | | | | | | Korea, Rep. of | 76 | 71 | 72 | Germany | 76 | 68 | 67 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | .5605 | 1 | | Rank2 | .6806 | 1 | | Rank2 | 0.8431 | 1 | | Rank2 | 0.8075 | 1 | |
| Rank3 | .4924 | .9459 | 1 | Rank3 | .6504 | .9295 | 1 | Rank3 | 0.7438 | 0.9179 | 1 | Rank3 | 0.7594 | 0.9393 | 1 |
| *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | |
| rank1=rank2 | .9063 | | | rank1=rank2 | .7660 | | | rank1=rank2 | 0.4096 | | | rank1=rank2 | .4160 | | |
| rank2=rank3 | .8043 | | | rank2=rank3 | .3368 | | | rank2=rank3 | 0.5446 | | | rank2=rank3 | .4704 | | |

Orgs and HH = Organizations and households.

## Table 2c: Spending On Social Safety Nets (SS/Tax Revenues)

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Kuwait | 1 | 1 | 1 | Sweden | 1 | 9 | 6 | Kuwait | 1 | 1 | 1 | Kuwait | 1 | 1 | 1 |
| Germany | 2 | 17 | 16 | France | 2 | 7 | 14 | Guinea-Bissau | 2 | 2 | 2 | Guinea-Bissau | 2 | 2 | 3 |
| Uruguay | 3 | 3 | 3 | Uruguay | 3 | 2 | 1 | Panama | 3 | 3 | 4 | Iran, Islamic Rep. | 3 | 3 | 2 |
| Spain | 4 | 4 | 6 | Argentina | 4 | 1 | 2 | Iceland | 4 | 5 | 5 | Cote d'Ivoire | 4 | 6 | 5 |
| Sweden | 5 | 19 | 20 | Belgium | 5 | 16 | 16 | Costa Rica | 5 | 4 | 3 | Colombia | 5 | 20 | 11 |
| Romania | 6 | 2 | 2 | Netherlands | 6 | 15 | 11 | Germany | 6 | 8 | 8 | Costa Rica | 6 | 4 | 4 |
| Switzerland | 7 | 23 | 17 | Austria | 7 | 6 | 10 | Iran, Islamic Rep. | 7 | 6 | 7 | Panama | 7 | 11 | 23 |
| Austria | 8 | 12 | 10 | Canada | 8 | 14 | 17 | France | 8 | 11 | 9 | Malaysia | 8 | 8 | 9 |
| Malta | 9 | 8 | 5 | United States | 9 | 19 | 18 | Ireland | 9 | 7 | 6 | Honduras | 9 | 24 | 31 |
| Luxembourg | 10 | 64 | 66 | Switzerland | 10 | 20 | 21 | Nicaragua | 10 | 15 | 29 | Jamaica | 10 | 13 | 20 |
| Argentina | 11 | 7 | 9 | Spain | 11 | 11 | 8 | Switzerland | 11 | 16 | 16 | Suriname | 11 | 60 | 67 |
| Belgium | 12 | 35 | 22 | Luxembourg | 12 | 39 | 38 | United Kingdom | 12 | 12 | 19 | Peru | 12 | 12 | 10 |
| France | 13 | 26 | 21 | Brazil | 13 | 3 | 5 | United States | 13 | 19 | 24 | Zimbabwe | 13 | 21 | 18 |
| Denmark | 14 | 25 | 19 | Norway | 14 | 32 | 37 | Italy | 14 | 24 | 15 | Mali | 14 | 38 | 46 |
| Canada | 15 | 28 | 29 | Poland | 15 | 26 | 31 | Honduras | 15 | 9 | 10 | Morocco | 15 | 17 | 15 |
| Japan | 16 | 11 | 14 | Panama | 16 | 5 | 4 | Austria | 16 | 21 | 14 | Niger | 16 | 23 | 22 |
| Italy | 17 | 36 | 51 | Israel | 17 | 34 | 32 | Malta | 17 | 28 | 22 | Tunisia | 17 | 22 | 26 |
| Brazil | 18 | 5 | 4 | United Kingdom | 18 | 24 | 22 | Netherlands | 18 | 33 | 39 | Thailand | 18 | 7 | 7 |
| Netherlands | 19 | 50 | 57 | Portugal | 19 | 8 | 9 | Dominican Republic | 19 | 26 | 30 | Senegal | 19 | 36 | 29 |
| Chile | 20 | 21 | 23 | Australia | 20 | 41 | 41 | Australia | 20 | 55 | 64 | Mexico | 20 | 19 | 24 |
| Finland | 21 | 58 | 64 | Cyprus | 21 | 17 | 36 | Gambia, The | 21 | 25 | 20 | Burkina Faso | 21 | 46 | 57 |
| Norway | 22 | 65 | 62 | Egypt, Arab Rep. | 22 | 10 | 12 | Greece | 22 | 13 | 26 | Turkey | 22 | 10 | 12 |
| United States | 23 | 54 | 49 | Greece | 23 | 22 | 27 | Jamaica | 23 | 20 | 17 | Singapore | 23 | 28 | 28 |
| Ireland | 24 | 29 | 33 | Costa Rica | 24 | 12 | 15 | Chile | 24 | 41 | 60 | Syrian Arab Republic | 24 | 39 | 35 |
| Portugal | 25 | 9 | 8 | Tunisia | 25 | 13 | 7 | Haiti | 25 | 22 | 18 | Togo | 25 | 40 | 44 |
| United Kingdom | 26 | 51 | 48 | Sri Lanka | 26 | 4 | 3 | Madagascar | 26 | 29 | 25 | Madagascar | 26 | 33 | 38 |
| Greece | 27 | 20 | 34 | Iceland | 27 | 45 | 45 | Brazil | 27 | 14 | 11 | Ethiopia | 27 | 64 | 63 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Australia | 28 | 70 | 72 | Trinidad and Tobago | 28 | 37 | 28 | Portugal | 28 | 10 | 12 | Nicaragua | 28 | 61 | 60 |
| Cyprus | 29 | 16 | 43 | Denmark | 29 | 47 | 43 | Guatemala | 29 | 17 | 27 | Guatemala | 29 | 25 | 32 |
| Iran, Islamic Rep. | 30 | 15 | 18 | Peru | 30 | 25 | 23 | Venezuela RB | 30 | 57 | 65 | Korea, Rep. | 30 | 18 | 17 |
| Israel | 31 | 69 | 68 | Nicaragua | 31 | 21 | 26 | Cyprus | 31 | 23 | 40 | Egypt, Arab Rep. | 31 | 49 | 50 |
| Guinea-Bissau | 32 | 6 | 7 | Paraguay | 32 | 23 | 20 | Finland | 32 | 54 | 61 | Cameroon | 32 | 41 | 39 |
| Sri Lanka | 33 | 10 | 13 | Korea, Rep. | 33 | 43 | 42 | Zimbabwe | 33 | 27 | 21 | Guyana | 33 | 59 | 47 |
| Panama | 34 | 22 | 26 | Guinea-Bissau | 34 | 18 | 24 | Guyana | 34 | 51 | 35 | Gambia, The | 34 | 66 | 71 |
| Mexico | 35 | 33 | 53 | Cameroon | 35 | 28 | 29 | Suriname | 35 | 68 | 71 | Venezuela RB | 35 | 55 | 59 |
| Paraguay | 36 | 13 | 12 | Mali | 36 | 27 | 13 | Tunisia | 36 | 34 | 44 | Chile | 36 | 58 | 65 |
| Iceland | 37 | 71 | 71 | Malaysia | 37 | 38 | 35 | Sri Lanka | 37 | 35 | 37 | Congo, Dem. Rep. | 37 | 14 | 13 |
| Costa Rica | 38 | 18 | 15 | South Africa | 38 | 35 | 30 | Burkina Faso | 38 | 42 | 68 | Cyprus | 38 | 16 | 14 |
| Colombia | 39 | 55 | 54 | Indonesia | 39 | 40 | 46 | Israel | 39 | 65 | 47 | Belgium | 39 | 44 | 48 |
| Egypt, Arab Rep. | 40 | 39 | 39 | Gambia, The | 40 | 29 | 19 | Canada | 40 | 62 | 57 | Congo, Rep. | 40 | 51 | 43 |
| Tunisia | 41 | 46 | 28 | Japan | 41 | 48 | 47 | Singapore | 41 | 56 | 63 | Malta | 41 | 71 | 69 |
| Nicaragua | 42 | 38 | 41 | Cote d'Ivoire | 42 | 31 | 39 | Peru | 42 | 37 | 31 | Ireland | 42 | 27 | 19 |
| Syrian Arab Republic | 43 | 53 | 31 | Thailand | 43 | 33 | 25 | Malaysia | 43 | 30 | 23 | Sri Lanka | 43 | 56 | 66 |
| Suriname | 44 | 67 | 69 | Guinea | 44 | 30 | 33 | Romania | 44 | 66 | 59 | Finland | 44 | 29 | 30 |
| Ethiopia | 45 | 14 | 11 | Gabon | 45 | 44 | 44 | Congo, Rep. | 45 | 45 | 51 | Paraguay | 45 | 35 | 33 |
| Trinidad and Tobago | 46 | 72 | 70 | Colombia | 46 | 46 | 48 | Togo | 46 | 39 | 45 | Dominican Republic | 46 | 62 | 56 |
| Morocco | 47 | 41 | 40 | Jamaica | 47 | 42 | 40 | Norway | 47 | 70 | 62 | Iceland | 47 | 30 | 25 |
| Togo | 48 | 30 | 27 | Togo | 48 | 36 | 34 | Trinidad and Tobago | 48 | 61 | 72 | Israel | 48 | 53 | 58 |
| Mali | 49 | 31 | 30 | | | | | Ethiopia | 49 | 48 | 58 | Netherlands | 49 | 47 | 55 |
| Guyana | 50 | 61 | 60 | | | | | Thailand | 50 | 31 | 34 | Italy | 50 | 43 | 42 |
| Honduras | 51 | 44 | 45 | | | | | Mali | 51 | 53 | 42 | Portugal | 51 | 15 | 16 |
| Korea, Rep. | 52 | 68 | 65 | | | | | Senegal | 52 | 43 | 33 | Greece | 52 | 26 | 21 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Zimbabwe | 53 | 37 | 37 | | | | | Colombia | 53 | 52 | 53 | Trinidad and Tobago | 53 | 63 | 72 |
| Guatemala | 54 | 42 | 46 | | | | | Niger | 54 | 32 | 38 | Denmark | 54 | 34 | 45 |
| Venezuela RB | 55 | 73 | 73 | | | | | Cote d'Ivoire | 55 | 36 | 36 | Haiti | 55 | 65 | 64 |
| South Africa | 56 | 52 | 50 | | | | | Spain | 56 | 63 | 52 | Romania | 56 | 67 | 51 |
| Dominican Republic | 57 | 66 | 61 | | | | | Cameroon | 57 | 49 | 49 | Austria | 57 | 31 | 27 |
| Congo, Rep. | 58 | 57 | 58 | | | | | Uruguay | 58 | 59 | 74 | Sweden | 58 | 45 | 41 |
| Senegal | 59 | 49 | 36 | | | | | Morocco | 59 | 47 | 46 | Indonesia | 59 | 57 | 53 |
| Haiti | 60 | 34 | 32 | | | | | Paraguay | 60 | 40 | 28 | Uruguay | 60 | 69 | 73 |
| Cameroon | 61 | 48 | 47 | | | | | Egypt, Arab Rep. | 61 | 69 | 73 | Luxembourg | 61 | 75 | 75 |
| Indonesia | 62 | 59 | 59 | | | | | Mexico | 62 | 58 | 50 | France | 62 | 48 | 34 |
| Malaysia | 63 | 60 | 63 | | | | | Turkey | 63 | 50 | 48 | Argentina | 63 | 50 | 37 |
| Madagascar | 64 | 45 | 42 | | | | | Syrian Arab Republic | 64 | 71 | 56 | Australia | 64 | 74 | 74 |
| Cote d'Ivoire | 65 | 40 | 38 | | | | | Congo, Dem. Rep. | 65 | 38 | 41 | South Africa | 65 | 32 | 40 |
| Burkina Faso | 66 | 43 | 56 | | | | | Denmark | 66 | 72 | 69 | Spain | 66 | 54 | 54 |
| Gambia, The | 67 | 32 | 44 | | | | | Argentina | 67 | 64 | 55 | Norway | 67 | 68 | 61 |
| Jamaica | 68 | 62 | 67 | | | | | India | 68 | 18 | 13 | Japan | 68 | 9 | 8 |
| Thailand | 69 | 47 | 35 | | | | | Indonesia | 69 | 60 | 67 | Brazil | 69 | 42 | 36 |
| Turkey | 70 | 63 | 55 | | | | | Luxembourg | 70 | 76 | 76 | Canada | 70 | 73 | 68 |
| Pakistan | 71 | 56 | 52 | | | | | South Africa | 71 | 46 | 32 | Switzerland | 71 | 52 | 52 |
| Singapore | 72 | 74 | 74 | | | | | Sweden | 72 | 74 | 70 | United Kingdom | 72 | 70 | 70 |
| Niger | 73 | 24 | 24 | | | | | Belgium | 73 | 75 | 75 | India | 73 | 5 | 6 |
| Congo, Dem. Rep. | 74 | 27 | 25 | | | | | Pakistan | 74 | 73 | 66 | Pakistan | 74 | 76 | 76 |
| | | | | | | | | Japan | 75 | 44 | 43 | United States | 75 | 37 | 49 |
| | | | | | | | | Korea, Rep | 76 | 67 | 54 | Germany | 76 | 72 | 62 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | | *Correlation Matrix* | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | 0.6419 | 1 | | Rank2 | 0.7434 | 1 | | Rank2 | 0.9341 | 1 | | Rank2 | 0.7163 | 1 | |
| Rank3 | 0.5765 | 0.9337 | 1 | Rank3 | 0.6743 | 0.9313 | 1 | Rank3 | 0.8614 | 0.9143 | 1 | Rank3 | 0.6848 | 0.9712 | 1 |
| *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | | *Rank test (p-value)* | | | |
| rank1=rank2 | 0.8151 | | | rank1=rank2 | 0.5515 | | | rank1=rank2 | 1 | | | rank1=rank2 | 1 | | |
| rank2=rank3 | 0.7035 | | | rank2=rank3 | 0.7493 | | | rank2=rank3 | 0.6254 | | | rank2=rank3 | 0.457 | | |

Orgs and HH = Organizations and households.

# Table 2d: Spending On Social Safety Nets (SS/GDP), by continent

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *Latin America and the Caribbean* | | | | | | | | | | | | | | | | | | | |
| Uruguay | 9 | 3 | 2 | Uruguay | 9 | 5 | 2 | Costa Rica | 7 | 9 | 12 | Guyana | 4 | 3 | 1 | Guyana | 1 | 2 | 1 |
| Chile | 19 | 19 | 14 | Brazil | 19 | 7 | 8 | Panama | 8 | 6 | 4 | Suriname | 5 | 13 | 7 | Suriname | 11 | 16 | 11 |
| Brazil | 24 | 9 | 12 | Costa Rica | 23 | 13 | 21 | Guyana | 14 | 13 | 11 | Costa Rica | 12 | 14 | 12 | Jamaica | 20 | 12 | 18 |
| Argentina | 29 | 49 | 48 | Argentina | 24 | 27 | 33 | Nicaragua | 16 | 12 | 16 | Panama | 15 | 20 | 18 | Nicaragua | 26 | 22 | 15 |
| Panama | 34 | 33 | 22 | Panama | 25 | 15 | 6 | Jamaica | 18 | 15 | 14 | Chile | 25 | 26 | 29 | Trinidad and Tobago | 35 | 44 | 44 |
| Costa Rica | 35 | 36 | 43 | Trinidad and Tobago | 28 | 40 | 38 | Chile | 24 | 16 | 28 | Trinidad and Tobago | 27 | 31 | 41 | Panama | 38 | 31 | 17 |
| Mexico | 37 | 58 | 65 | Nicaragua | 30 | 17 | 17 | Suriname | 26 | 28 | 20 | Venezuela RB | 32 | 30 | 24 | Chile | 43 | 43 | 40 |
| Guyana | 38 | 44 | 41 | Peru | 32 | 35 | 39 | Trinidad and Tobago | 28 | 38 | 46 | Nicaragua | 35 | 36 | 40 | Uruguay | 44 | 45 | 37 |
| Suriname | 39 | 56 | 58 | Paraguay | 34 | 33 | 34 | Venezuela RB | 32 | 36 | 39 | Honduras | 38 | 40 | 48 | Brazil | 45 | 29 | 29 |
| Nicaragua | 40 | 28 | 38 | Jamaica | 46 | 38 | 37 | Honduras | 33 | 21 | 17 | Peru | 41 | 42 | 56 | Costa Rica | 48 | 47 | 46 |
| Trinidad and Tobago | 41 | 69 | 71 | Colombia | 47 | 42 | 46 | Brazil | 34 | 33 | 40 | Mexico | 44 | 45 | 53 | Venezuela RB | 60 | 72 | 69 |
| Colombia | 44 | 57 | 57 | | | | | Dominican Republic | 37 | 35 | 43 | Colombia | 45 | 43 | 33 | Mexico | 63 | 65 | 70 |
| Paraguay | 45 | 45 | 53 | | | | | Uruguay | 45 | 56 | 51 | Uruguay | 54 | 62 | 52 | Haiti | 65 | 62 | 59 |
| Venezuela RB | 52 | 72 | 70 | | | | | Haiti | 49 | 43 | 35 | Dominican Republic | 58 | 64 | 61 | Peru | 70 | 67 | 77 |
| Jamaica | 55 | 61 | 67 | | | | | Peru | 54 | 57 | 59 | Guatemala | 62 | 68 | 72 | Honduras | 71 | 66 | 67 |
| Honduras | 59 | 48 | 46 | | | | | Guatemala | 57 | 58 | 57 | Paraguay | 64 | 69 | 70 | Dominican Republic | 72 | 71 | 74 |
| Dominican Republic | 63 | 66 | 62 | | | | | Colombia | 64 | 60 | 67 | Haiti | 67 | 72 | 69 | Argentina | 73 | 75 | 75 |
| Haiti | 65 | 41 | 33 | | | | | Mexico | 68 | 67 | 64 | Brazil | 69 | 65 | 63 | Colombia | 76 | 76 | 73 |
| Guatemala | 66 | 54 | 51 | | | | | Paraguay | 69 | 65 | 62 | Argentina | 70 | 74 | 68 | Guatemala | 78 | 77 | 76 |
| | | | | | | | | Argentina | 72 | 72 | 74 | | | | | Paraguay | 79 | 78 | 79 |
| *Sub-Saharan Africa* | | | | | | | | | | | | | | | | | | | |
| Togo | 43 | 22 | 29 | South Africa | 33 | 29 | 23 | Guinea-Bissau | 12 | 7 | 9 | Cote d'Ivoire | 2 | 5 | 3 | Guinea-Bissau | 3 | 3 | 3 |
| Guinea-Bissau | 46 | 18 | 16 | Cameroon | 36 | 30 | 22 | Congo, Rep. | 30 | 20 | 31 | Togo | 11 | 12 | 23 | Congo, Rep. | 17 | 7 | 6 |
| Congo, Rep. | 48 | 46 | 37 | Mali | 37 | 21 | 20 | Gambia, The | 31 | 22 | 15 | Zimbabwe | 14 | 16 | 19 | Togo | 24 | 11 | 12 |
| South Africa | 49 | 59 | 54 | Gambia, The | 38 | 23 | 15 | Zimbabwe | 35 | 23 | 29 | Guinea-Bissau | 17 | 18 | 20 | Gabon | 25 | 9 | 9 |
| Zimbabwe | 51 | 39 | 52 | Cote d'Ivoire | 39 | 19 | 32 | Togo | 36 | 17 | 22 | Congo, Rep. | 19 | 22 | 21 | South Africa | 39 | 27 | 27 |
| Ethiopia | 53 | 11 | 8 | Guinea-Bissau | 42 | 20 | 24 | Cote d'Ivoire | 46 | 39 | 45 | Senegal | 21 | 38 | 28 | Cote d'Ivoire | 41 | 28 | 34 |
| Senegal | 56 | 42 | 25 | Guinea | 44 | 25 | 28 | Senegal | 47 | 40 | 30 | Gambia, The | 42 | 57 | 60 | Zimbabwe | 42 | 35 | 38 |
| Cote d'Ivoire | 58 | 32 | 35 | Gabon | 45 | 41 | 42 | Madagascar | 51 | 37 | 27 | Niger | 46 | 53 | 37 | Gambia, The | 47 | 49 | 53 |
| Mali | 60 | 27 | 34 | Togo | 48 | 28 | 29 | Ethiopia | 58 | 25 | 47 | Mali | 48 | 48 | 57 | Ethiopia | 50 | 38 | 31 |
| Cameroon | 62 | 47 | 42 | | | | | Cameroon | 59 | 50 | 53 | Cameroon | 51 | 55 | 46 | Guinea | 53 | 42 | 51 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Gambia, The | 64 | 29 | 32 | | | | | Burkina Faso | 60 | 41 | 56 | Ethiopia | 52 | 50 | 54 | Mali | 54 | 50 | 60 |
| Madagascar | 67 | 30 | 28 | | | | | Niger | 61 | 48 | 36 | Burkina Faso | 55 | 60 | 58 | Senegal | 55 | 56 | 50 |
| Burkina Faso | 71 | 34 | 44 | | | | | Mali | 62 | 45 | 26 | Madagascar | 56 | 58 | 55 | Cameroon | 62 | 58 | 48 |
| Niger | 73 | 24 | 13 | | | | | South Africa | 65 | 69 | 49 | South Africa | 59 | 66 | 59 | Madagascar | 67 | 64 | 62 |
| Congo, Dem. Rep. | 74 | 20 | 20 | | | | | Congo, Dem. Rep. | 75 | 52 | 58 | Congo, Dem. Rep. | 66 | 63 | 64 | Niger | 68 | 53 | 47 |
| | | | | | | | | | | | | | | | | Congo, Dem. Rep. | 75 | 59 | 56 |
| | | | | | | | | | | | | | | | | Burkina Faso | 77 | 74 | 64 |
| *North America* | | | | | | | | | | | | | | | | | | | |
| Canada | 21 | 65 | 63 | United States | 15 | 31 | 35 | United States | 17 | 31 | 24 | Canada | 71 | 70 | 71 | Canada | 51 | 69 | 71 |
| United States | 26 | 64 | 55 | Canada | 16 | 39 | 41 | Canada | 42 | 66 | 69 | United States | 73 | 51 | 51 | United States | 52 | 61 | 54 |
| *Western Europe* | | | | | | | | | | | | | | | | | | | |
| Belgium | 1 | 1 | 1 | Belgium | 1 | 3 | 5 | France | 1 | 2 | 2 | Belgium | 1 | 1 | 2 | Netherlands | 4 | 4 | 7 |
| Luxembourg | 2 | 12 | 19 | Netherlands | 2 | 1 | 1 | Netherlands | 2 | 3 | 3 | Netherlands | 6 | 2 | 6 | Belgium | 5 | 6 | 8 |
| Sweden | 3 | 7 | 7 | France | 3 | 2 | 3 | Germany | 3 | 4 | 5 | Ireland | 9 | 8 | 4 | Italy | 9 | 14 | 23 |
| Netherlands | 4 | 2 | 5 | Sweden | 4 | 4 | 4 | Ireland | 4 | 1 | 1 | Finland | 20 | 19 | 15 | Ireland | 10 | 15 | 21 |
| France | 5 | 4 | 3 | Luxembourg | 5 | 32 | 27 | Iceland | 5 | 5 | 7 | Denmark | 24 | 24 | 26 | France | 13 | 18 | 13 |
| Austria | 6 | 6 | 4 | Austria | 6 | 8 | 11 | United Kingdom | 6 | 8 | 6 | Italy | 26 | 21 | 32 | Luxembourg | 14 | 46 | 58 |
| Germany | 7 | 10 | 9 | Spain | 10 | 11 | 9 | Austria | 9 | 14 | 13 | Iceland | 29 | 34 | 38 | Sweden | 15 | 39 | 39 |
| Denmark | 8 | 13 | 10 | Norway | 11 | 34 | 30 | Italy | 10 | 10 | 8 | Sweden | 30 | 25 | 25 | United Kingdom | 18 | 20 | 22 |
| Italy | 11 | 16 | 26 | United Kingdom | 12 | 14 | 19 | Switzerland | 15 | 46 | 44 | Austria | 31 | 33 | 30 | Austria | 21 | 37 | 36 |
| Spain | 12 | 8 | 18 | Switzerland | 13 | 43 | 45 | Finland | 21 | 44 | 50 | Cyprus | 33 | 41 | 34 | Denmark | 22 | 36 | 33 |
| Norway | 13 | 51 | 39 | Cyprus | 17 | 24 | 25 | Norway | 25 | 51 | 42 | Luxembourg | 34 | 28 | 36 | Norway | 23 | 41 | 42 |
| Ireland | 14 | 14 | 15 | Denmark | 20 | 46 | 44 | Cyprus | 29 | 55 | 63 | France | 37 | 29 | 22 | Germany | 28 | 40 | 45 |
| Finland | 15 | 60 | 60 | Iceland | 22 | 47 | 48 | Spain | 38 | 62 | 65 | Norway | 53 | 54 | 39 | Cyprus | 31 | 34 | 30 |
| United Kingdom | 17 | 23 | 23 | | | | | Denmark | 53 | 71 | 66 | Spain | 61 | 61 | 66 | Finland | 32 | 57 | 49 |
| Switzerland | 18 | 68 | 64 | | | | | Luxembourg | 55 | 75 | 73 | United Kingdom | 68 | 67 | 73 | Iceland | 36 | 54 | 55 |
| Cyprus | 28 | 50 | 49 | | | | | Belgium | 56 | 70 | 75 | Switzerland | 72 | 75 | 74 | Spain | 40 | 52 | 61 |
| Iceland | 30 | 71 | 72 | | | | | Sweden | 63 | 74 | 72 | Germany | 76 | 71 | 75 | Switzerland | 56 | 79 | 78 |
| *South Asia* | | | | | | | | | | | | | | | | | | | |
| Sri Lanka | 33 | 15 | 21 | Sri Lanka | 29 | 9 | 7 | Sri Lanka | 40 | 29 | 25 | Sri Lanka | 49 | 49 | 62 | Sri Lanka | 37 | 24 | 35 |
| Pakistan | 72 | 31 | 30 | | | | | India | 73 | 19 | 18 | Pakistan | 74 | 76 | 76 | Pakistan | 59 | 51 | 52 |
| | | | | | | | | Pakistan | 74 | 53 | 48 | India | 75 | 6 | 5 | India | 74 | 10 | 14 |
| *Middle East and North Africa* | | | | | | | | | | | | | | | | | | | |
| Malta | 10 | 5 | 6 | Israel | 8 | 16 | 12 | Malta | 11 | 11 | 10 | Tunisia | 7 | 7 | 11 | Israel | 2 | 1 | 2 |
| Israel | 16 | 26 | 47 | Portugal | 14 | 10 | 14 | Israel | 13 | 27 | 19 | Israel | 8 | 10 | 13 | Kuwait | 6 | 33 | 32 |
| Portugal | 23 | 21 | 24 | Tunisia | 21 | 12 | 16 | Kuwait | 20 | 24 | 21 | Morocco | 13 | 15 | 14 | Egypt, Arab Rep. | 7 | 8 | 5 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | | *Total Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Greece | 27 | 43 | 40 | Egypt, Arab Rep. | 26 | 18 | 13 | Portugal | 22 | 26 | 37 | Kuwait | 16 | 9 | 10 | Malta | 12 | 13 | 20 |
| Kuwait | 31 | 74 | 74 | Greece | 27 | 36 | 18 | Greece | 23 | 30 | 41 | Egypt, Arab Rep. | 18 | 17 | 9 | Portugal | 19 | 17 | 19 |
| Egypt, Arab Rep. | 32 | 25 | 17 | | | | | Tunisia | 27 | 18 | 23 | Malta | 22 | 27 | 35 | Greece | 27 | 21 | 10 |
| Tunisia | 36 | 38 | 31 | | | | | Iran, Islamic Rep. | 39 | 34 | 32 | Iran, Islamic Rep. | 23 | 23 | 17 | Syrian Arab Republic | 29 | 23 | 28 |
| Iran, Islamic Rep. | 42 | 52 | 45 | | | | | Egypt, Arab Rep. | 48 | 42 | 38 | Portugal | 39 | 39 | 44 | Tunisia | 30 | 26 | 24 |
| Morocco | 47 | 37 | 36 | | | | | Morocco | 50 | 49 | 52 | Syrian Arab Republic | 47 | 46 | 45 | Iran, Islamic Rep. | 33 | 30 | 25 |
| Syrian Arab Republic | 50 | 55 | 50 | | | | | Syrian Arab Republic | 67 | 63 | 54 | Greece | 50 | 47 | 31 | Morocco | 34 | 25 | 26 |
| *Eastern Europe and Central Asia* | | | | | | | | | | | | | | | | | | | |
| Romania | 22 | 17 | 11 | Poland | 7 | 6 | 10 | Romania | 43 | 68 | 70 | Turkey | 40 | 37 | 47 | Poland | 8 | 5 | 4 |
| Turkey | 69 | 63 | 59 | | | | | Turkey | 66 | 64 | 68 | Romania | 57 | 73 | 65 | Romania | 16 | 19 | 16 |
| | | | | | | | | | | | | | | | | Turkey | 58 | 55 | 57 |
| *East Asia and the Pacific* | | | | | | | | | | | | | | | | | | | |
| Japan | 20 | 35 | 56 | Australia | 18 | 48 | 47 | Australia | 19 | 32 | 34 | Malaysia | 10 | 11 | 16 | Malaysia | 46 | 32 | 41 |
| Australia | 25 | 70 | 69 | Korea, Rep. | 31 | 44 | 43 | Malaysia | 41 | 47 | 33 | Singapore | 28 | 32 | 27 | Australia | 49 | 73 | 68 |
| Korea, Rep. | 54 | 67 | 68 | Malaysia | 35 | 37 | 31 | Singapore | 44 | 59 | 61 | Thailand | 36 | 35 | 49 | Singapore | 57 | 70 | 65 |
| Malaysia | 57 | 62 | 66 | Indonesia | 40 | 22 | 36 | Thailand | 52 | 61 | 55 | Korea, Rep. | 43 | 44 | 43 | Indonesia | 61 | 48 | 43 |
| Indonesia | 61 | 40 | 27 | Japan | 41 | 45 | 40 | Indonesia | 70 | 54 | 60 | Australia | 60 | 56 | 50 | Japan | 64 | 63 | 66 |
| Thailand | 68 | 53 | 61 | Thailand | 43 | 26 | 26 | Japan | 71 | 76 | 76 | Indonesia | 63 | 52 | 42 | Thailand | 66 | 60 | 63 |
| Singapore | 70 | 73 | 73 | | | | | Korea, Rep. | 76 | 73 | 71 | Japan | 65 | 59 | 67 | Korea, Rep. | 69 | 68 | 72 |

Orgs and HH = Organizations and households.

# Table 2e: Spending On Social Safety Nets (SS/Total Expenditure), by continent

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *Latin America and the Caribbean* | • | • | • | • | | | | | | | | | | | |
| Uruguay | 1 | 1 | 1 | Uruguay | 1 | 2 | 1 | Costa Rica | 2 | 2 | 3 | Costa Rica | 2 | 1 | 4 |
| Argentina | 10 | 3 | 4 | Argentina | 5 | 1 | 2 | Panama | 4 | 3 | 2 | Colombia | 3 | 3 | 1 |
| Chile | 19 | 6 | 6 | Panama | 19 | 5 | 3 | Honduras | 13 | 7 | 5 | Honduras | 5 | 10 | 10 |
| Brazil | 22 | 10 | 15 | Brazil | 20 | 10 | 14 | Nicaragua | 15 | 6 | 18 | Jamaica | 7 | 16 | 14 |
| Paraguay | 29 | 12 | 14 | Costa Rica | 22 | 6 | 9 | Dominican Republic | 16 | 10 | 17 | Peru | 10 | 11 | 12 |
| Mexico | 31 | 38 | 51 | Trinidad and Tobago | 25 | 38 | 27 | Venezuela RB | 17 | 14 | 22 | Mexico | 13 | 22 | 17 |
| Costa Rica | 33 | 23 | 29 | Paraguay | 31 | 17 | 17 | Chile | 19 | 18 | 32 | Venezuela RB | 15 | 4 | 3 |
| Colombia | 35 | 43 | 45 | Peru | 32 | 26 | 22 | Guatemala | 21 | 24 | 26 | Panama | 18 | 31 | 37 |
| Panama | 36 | 34 | 32 | Nicaragua | 33 | 19 | 23 | Jamaica | 22 | 23 | 16 | Guatemala | 20 | 35 | 33 |
| Nicaragua | 38 | 19 | 30 | Colombia | 44 | 45 | 48 | Trinidad and Tobago | 26 | 34 | 49 | Suriname | 23 | 32 | 25 |
| Trinidad and Tobago | 41 | 68 | 68 | Jamaica | 47 | 43 | 39 | Brazil | 31 | 36 | 36 | Nicaragua | 28 | 39 | 50 |
| Suriname | 44 | 60 | 65 | | | | | Haiti | 36 | 29 | 27 | Chile | 29 | 25 | 34 |
| Venezuela RB | 45 | 71 | 71 | | | | | Suriname | 41 | 37 | 33 | Paraguay | 31 | 53 | 49 |
| Guatemala | 47 | 53 | 42 | | | | | Peru | 42 | 46 | 34 | Trinidad and Tobago | 32 | 28 | 53 |
| Honduras | 49 | 35 | 33 | | | | | Guyana | 48 | 38 | 19 | Dominican Republic | 34 | 44 | 44 |
| Dominican Republic | 52 | 61 | 54 | | | | | Colombia | 49 | 45 | 54 | Guyana | 41 | 50 | 30 |
| Guyana | 57 | 56 | 50 | | | | | Uruguay | 52 | 55 | 62 | Uruguay | 59 | 64 | 64 |
| Haiti | 66 | 41 | 40 | | | | | Paraguay | 56 | 57 | 42 | Argentina | 62 | 69 | 60 |
| Jamaica | 68 | 64 | 67 | | | | | Mexico | 61 | 64 | 47 | Haiti | 64 | 73 | 74 |
| | | | | | | | | Argentina | 67 | 68 | 74 | Brazil | 69 | 72 | 72 |
| *Sub-Saharan Africa* | | | | | | | | | | | | | | | |
| Togo | 46 | 25 | 21 | Gambia, The | 34 | 23 | 13 | Gambia, The | 25 | 17 | 8 | Cote d'Ivoire | 1 | 2 | 2 |
| South Africa | 51 | 66 | 64 | Cameroon | 35 | 29 | 28 | Guinea-Bissau | 27 | 21 | 30 | Senegal | 9 | 18 | 7 |
| Ethiopia | 53 | 9 | 7 | South Africa | 38 | 34 | 32 | Burkina Faso | 32 | 22 | 46 | Zimbabwe | 11 | 21 | 20 |
| Zimbabwe | 54 | 42 | 48 | Mali | 40 | 27 | 16 | Zimbabwe | 33 | 27 | 29 | Burkina Faso | 16 | 17 | 29 |
| Senegal | 55 | 40 | 31 | Cote d'Ivoire | 41 | 25 | 34 | Madagascar | 37 | 25 | 21 | Niger | 17 | 37 | 23 |
| Cameroon | 56 | 48 | 53 | Guinea | 43 | 30 | 31 | Senegal | 46 | 26 | 25 | Togo | 22 | 38 | 51 |
| Mali | 58 | 27 | 19 | Gabon | 45 | 44 | 44 | Togo | 47 | 35 | 38 | Mali | 25 | 30 | 38 |
| Burkina Faso | 60 | 26 | 44 | Guinea-Bissau | 46 | 28 | 35 | Cote d'Ivoire | 51 | 48 | 41 | Cameroon | 26 | 45 | 48 |
| Cote d'Ivoire | 61 | 46 | 41 | Togo | 48 | 33 | 25 | Congo, Rep. | 53 | 49 | 57 | Madagascar | 35 | 47 | 45 |
| Congo, Rep. | 62 | 57 | 58 | | | | | Niger | 54 | 47 | 39 | Gambia, The | 37 | 56 | 55 |
| Guinea-Bissau | 63 | 21 | 23 | | | | | Cameroon | 55 | 50 | 58 | Ethiopia | 42 | 62 | 71 |
| Madagascar | 65 | 32 | 26 | | | | | Mali | 58 | 42 | 20 | Congo, Rep. | 45 | 61 | 58 |
| Gambia, The | 69 | 29 | 25 | | | | | Ethiopia | 59 | 33 | 65 | Congo, Dem. Rep. | 49 | 48 | 52 |
| Niger | 73 | 30 | 20 | | | | | South Africa | 68 | 72 | 59 | Guinea-Bissau | 56 | 70 | 69 |
| Congo, Dem. Rep. | 74 | 31 | 34 | | | | | Congo, Dem. Rep. | 72 | 58 | 66 | South Africa | 66 | 74 | 70 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *North America* | | | | | | | | | | | | | | | |
| Canada | 14 | 22 | 22 | United States | 9 | 16 | 18 | United States | 9 | 12 | 14 | Canada | 70 | 66 | 65 |
| United States | 20 | 55 | 37 | Canada | 13 | 21 | 29 | Canada | 34 | 54 | 56 | United States | 73 | 41 | 43 |
| *Western Europe* | | | | | | | | | | | | | | | |
| Germany | 2 | 7 | 8 | France | 2 | 3 | 10 | Iceland | 1 | 1 | 1 | Belgium | 27 | 12 | 31 |
| Luxembourg | 3 | 14 | 18 | Luxembourg | 3 | 36 | 26 | Germany | 3 | 4 | 4 | Finland | 30 | 9 | 6 |
| Switzerland | 4 | 15 | 12 | Sweden | 4 | 8 | 8 | France | 5 | 5 | 6 | Iceland | 33 | 26 | 41 |
| Spain | 5 | 2 | 2 | Netherlands | 6 | 12 | 6 | Switzerland | 6 | 11 | 12 | Netherlands | 36 | 23 | 28 |
| Sweden | 6 | 5 | 9 | Belgium | 7 | 14 | 15 | Ireland | 7 | 9 | 7 | Ireland | 38 | 42 | 26 |
| Austria | 7 | 4 | 3 | Austria | 8 | 4 | 7 | United Kingdom | 8 | 8 | 10 | Denmark | 40 | 34 | 42 |
| France | 8 | 13 | 13 | Spain | 10 | 7 | 4 | Austria | 10 | 20 | 15 | Cyprus | 43 | 55 | 47 |
| Belgium | 9 | 17 | 11 | Switzerland | 11 | 24 | 30 | Netherlands | 11 | 13 | 11 | Italy | 46 | 33 | 32 |
| Denmark | 11 | 16 | 10 | Norway | 12 | 32 | 37 | Italy | 12 | 16 | 9 | Austria | 52 | 46 | 36 |
| Netherlands | 13 | 28 | 39 | United Kingdom | 15 | 22 | 20 | Finland | 23 | 30 | 45 | Sweden | 53 | 29 | 22 |
| Norway | 15 | 47 | 43 | Cyprus | 21 | 20 | 36 | Norway | 30 | 52 | 40 | Luxembourg | 55 | 19 | 16 |
| Italy | 16 | 36 | 49 | Iceland | 23 | 46 | 47 | Cyprus | 35 | 62 | 64 | France | 60 | 40 | 27 |
| Finland | 18 | 51 | 57 | Denmark | 27 | 47 | 45 | Spain | 50 | 63 | 55 | Norway | 63 | 49 | 40 |
| United Kingdom | 23 | 45 | 38 | | | | | Denmark | 62 | 70 | 69 | Spain | 65 | 57 | 61 |
| Ireland | 24 | 49 | 55 | | | | | Luxembourg | 65 | 75 | 67 | Switzerland | 71 | 67 | 63 |
| Cyprus | 28 | 52 | 62 | | | | | Sweden | 69 | 74 | 71 | United Kingdom | 72 | 71 | 75 |
| Iceland | 30 | 72 | 72 | | | | | Belgium | 71 | 73 | 76 | Germany | 76 | 68 | 67 |
| South Asia | | | | | | | | | | | | | | | |
| Sri Lanka | 34 | 11 | 16 | Sri Lanka | 29 | 9 | 5 | Sri Lanka | 45 | 41 | 28 | Sri Lanka | 51 | 65 | 68 |
| Pakistan | 72 | 37 | 36 | | | | | India | 70 | 32 | 24 | India | 74 | 7 | 8 |
| | | | | | | | | Pakistan | 75 | 60 | 52 | Pakistan | 75 | 75 | 76 |
| *Middle East and North Africa* | | | | | | | | | | | | | | | |
| Malta | 17 | 8 | 5 | Israel | 17 | 42 | 40 | Malta | 18 | 19 | 13 | Tunisia | 8 | 13 | 21 |
| Portugal | 25 | 24 | 27 | Portugal | 18 | 11 | 12 | Portugal | 20 | 43 | 50 | Morocco | 19 | 24 | 24 |
| Greece | 26 | 39 | 63 | Tunisia | 24 | 13 | 11 | Greece | 24 | 31 | 53 | Iran, Islamic Rep. | 24 | 27 | 19 |
| Israel | 32 | 69 | 70 | Egypt, Arab Rep. | 26 | 18 | 24 | Tunisia | 29 | 28 | 43 | Kuwait | 39 | 8 | 9 |
| Tunisia | 37 | 44 | 24 | Greece | 28 | 37 | 38 | Kuwait | 38 | 44 | 37 | Egypt, Arab Rep. | 44 | 43 | 39 |
| Egypt, Arab Rep. | 39 | 33 | 35 | | | | | Israel | 43 | 65 | 44 | Portugal | 47 | 59 | 62 |
| Kuwait | 40 | 73 | 74 | | | | | Iran, Islamic Rep. | 44 | 39 | 35 | Malta | 48 | 51 | 56 |
| Iran, Islamic Rep. | 42 | 54 | 56 | | | | | Morocco | 60 | 61 | 63 | Israel | 50 | 54 | 57 |
| Morocco | 48 | 50 | 47 | | | | | Egypt, Arab Rep. | 63 | 56 | 60 | Greece | 54 | 58 | 54 |
| Syrian Arab Republic | 64 | 62 | 46 | | | | | Syrian Arab Republic | 73 | 67 | 61 | Syrian Arab Republic | 57 | 63 | 59 |
| *Eastern Europe and Central Asia* | | | | | | | | | | | | | | | |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Romania | 27 | 18 | 17 | Poland | 14 | 15 | 21 | Romania | 57 | 69 | 73 | Turkey | 21 | 20 | 18 |
| Turkey | 71 | 67 | 60 | | | | | Turkey | 64 | 66 | 70 | Romania | 68 | 76 | 73 |
| *East Asia and the Pacific* | | | | | | | | | | | | | | | |
| Japan | 12 | 20 | 28 | Australia | 16 | 41 | 42 | Australia | 14 | 15 | 23 | Malaysia | 4 | 14 | 13 |
| Australia | 21 | 59 | 61 | Korea, Rep. | 30 | 40 | 41 | Singapore | 28 | 40 | 51 | Thailand | 6 | 6 | 15 |
| Korea, Rep. | 43 | 70 | 69 | Malaysia | 36 | 39 | 33 | Malaysia | 39 | 53 | 31 | Singapore | 12 | 5 | 5 |
| Indonesia | 50 | 58 | 52 | Indonesia | 37 | 35 | 43 | Thailand | 40 | 51 | 48 | Korea, Rep. | 14 | 15 | 11 |
| Malaysia | 59 | 65 | 66 | Japan | 39 | 48 | 46 | Indonesia | 66 | 59 | 68 | Indonesia | 58 | 52 | 46 |
| Thailand | 67 | 63 | 59 | Thailand | 42 | 31 | 19 | Japan | 74 | 76 | 75 | Australia | 61 | 36 | 35 |
| Singapore | 70 | 74 | 73 | | | | | Korea, Rep. | 76 | 71 | 72 | Japan | 67 | 60 | 66 |

Orgs and HH = Organizations and households.

# Table 2f: Spending On Social Safety Nets (SS/Tax Revenues), by continent

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *Latin America and the Caribbean* | | | | | | | | | | | | | | | |
| Uruguay | 3 | 3 | 3 | Uruguay | 3 | 2 | 1 | Panama | 3 | 3 | 4 | Colombia | 5 | 20 | 11 |
| Argentina | 11 | 7 | 9 | Argentina | 4 | 1 | 2 | Costa Rica | 5 | 4 | 3 | Costa Rica | 6 | 4 | 4 |
| Brazil | 18 | 5 | 4 | Brazil | 13 | 3 | 5 | Nicaragua | 10 | 15 | 29 | Panama | 7 | 11 | 23 |
| Chile | 20 | 21 | 23 | Panama | 16 | 5 | 4 | Honduras | 15 | 9 | 10 | Honduras | 9 | 24 | 31 |
| Panama | 34 | 22 | 26 | Costa Rica | 24 | 12 | 15 | Dominican Republic | 19 | 26 | 30 | Jamaica | 10 | 13 | 20 |
| México | 35 | 33 | 53 | Trinidad and Tobago | 28 | 37 | 28 | Jamaica | 23 | 20 | 17 | Suriname | 11 | 60 | 67 |
| Paraguay | 36 | 13 | 12 | Peru | 30 | 25 | 23 | Chile | 24 | 41 | 60 | Peru | 12 | 12 | 10 |
| Costa Rica | 38 | 18 | 15 | Nicaragua | 31 | 21 | 26 | Haiti | 25 | 22 | 18 | Mexico | 20 | 19 | 24 |
| Colombia | 39 | 55 | 54 | Paraguay | 32 | 23 | 20 | Brazil | 27 | 14 | 11 | Nicaragua | 28 | 61 | 60 |
| Nicaragua | 42 | 38 | 41 | Colombia | 46 | 46 | 48 | Guatemala | 29 | 17 | 27 | Guatemala | 29 | 25 | 32 |
| Suriname | 44 | 67 | 69 | Jamaica | 47 | 42 | 40 | Venezuela RB | 30 | 57 | 65 | Guyana | 33 | 59 | 47 |
| Trinidad and Tobago | 46 | 72 | 70 | | | | | Guyana | 34 | 51 | 35 | Venezuela RB | 35 | 55 | 59 |
| Guyana | 50 | 61 | 60 | | | | | Suriname | 35 | 68 | 71 | Chile | 36 | 58 | 65 |
| Honduras | 51 | 44 | 45 | | | | | Peru | 42 | 37 | 31 | Paraguay | 45 | 35 | 33 |
| Guatemala | 54 | 42 | 46 | | | | | Trinidad and Tobago | 48 | 61 | 72 | Dominican Republic | 46 | 62 | 56 |
| Venezuela RB | 55 | 73 | 73 | | | | | Colombia | 53 | 52 | 53 | Trinidad and Tobago | 53 | 63 | 72 |
| Dominican Republic | 57 | 66 | 61 | | | | | Uruguay | 58 | 59 | 74 | Haiti | 55 | 65 | 64 |
| Haití | 60 | 34 | 32 | | | | | Paraguay | 60 | 40 | 28 | Uruguay | 60 | 69 | 73 |
| Jamaica | 68 | 62 | 67 | | | | | Mexico | 62 | 58 | 50 | Argentina | 63 | 50 | 37 |
| | | | | | | | | Argentina | 67 | 64 | 55 | Brazil | 69 | 42 | 36 |
| *Sub-Saharan Africa* | | | | | | | | | | | | | | | |
| Guinea-Bissau | 32 | 6 | 7 | Guinea-Bissau | 34 | 18 | 24 | Guinea-Bissau | 2 | 2 | 2 | Guinea-Bissau | 2 | 2 | 3 |
| Etiopia | 45 | 14 | 11 | Cameroon | 35 | 28 | 29 | Gambia, The | 21 | 25 | 20 | Cote d'Ivoire | 4 | 6 | 5 |
| Togo | 48 | 30 | 27 | Mali | 36 | 27 | 13 | Madagascar | 26 | 29 | 25 | Zimbabwe | 13 | 21 | 18 |
| Mali | 49 | 31 | 30 | South Africa | 38 | 35 | 30 | Zimbabwe | 33 | 27 | 21 | Mali | 14 | 38 | 46 |
| Zimbabwe | 53 | 37 | 37 | Gambia, The | 40 | 29 | 19 | Burkina Faso | 38 | 42 | 68 | Niger | 16 | 23 | 22 |
| South Africa | 56 | 52 | 50 | Cote d'Ivoire | 42 | 31 | 39 | Congo, Rep. | 45 | 45 | 51 | Senegal | 19 | 36 | 29 |
| Congo, Rep. | 58 | 57 | 58 | Guinea | 44 | 30 | 33 | Togo | 46 | 39 | 45 | Burkina Faso | 21 | 46 | 57 |
| Senegal | 59 | 49 | 36 | Gabon | 45 | 44 | 44 | Ethiopia | 49 | 48 | 58 | Togo | 25 | 40 | 44 |
| Cameroon | 61 | 48 | 47 | Togo | 48 | 36 | 34 | Mali | 51 | 53 | 42 | Madagascar | 26 | 33 | 38 |
| Madagascar | 64 | 45 | 42 | | | | | Senegal | 52 | 43 | 33 | Ethiopia | 27 | 64 | 63 |
| Cote d'Ivoire | 65 | 40 | 38 | | | | | Niger | 54 | 32 | 38 | Cameroon | 32 | 41 | 39 |
| Burkina Faso | 66 | 43 | 56 | | | | | Cote d'Ivoire | 55 | 36 | 36 | Gambia, The | 34 | 66 | 71 |
| Gambia, The | 67 | 32 | 44 | | | | | Cameroon | 57 | 49 | 49 | Congo, Dem. Rep. | 37 | 14 | 13 |
| Niger | 73 | 24 | 24 | | | | | Congo, Dem. Rep. | 65 | 38 | 41 | Congo, Rep. | 40 | 51 | 43 |
| Congo, Dem. Rep. | 74 | 27 | 25 | | | | | South Africa | 71 | 46 | 32 | South Africa | 65 | 32 | 40 |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| *North America* | | | | | | | | | | | | | | | |
| Canada | 15 | 28 | 29 | Canada | 8 | 14 | 17 | United States | 13 | 19 | 24 | Canada | 70 | 73 | 68 |
| United States | 23 | 54 | 49 | United States | 9 | 19 | 18 | Canada | 40 | 62 | 57 | United States | 75 | 37 | 49 |
| *Western Europe* | | | | | | | | | | | | | | | |
| Germany | 2 | 17 | 16 | Sweden | 1 | 9 | 6 | Iceland | 4 | 5 | 5 | Cyprus | 38 | 16 | 14 |
| Spain | 4 | 4 | 6 | France | 2 | 7 | 14 | Germany | 6 | 8 | 8 | Belgium | 39 | 44 | 48 |
| Sweden | 5 | 19 | 20 | Belgium | 5 | 16 | 16 | France | 8 | 11 | 9 | Ireland | 42 | 27 | 19 |
| Switzerland | 7 | 23 | 17 | Netherlands | 6 | 15 | 11 | Ireland | 9 | 7 | 6 | Finland | 44 | 29 | 30 |
| Austria | 8 | 12 | 10 | Austria | 7 | 6 | 10 | Switzerland | 11 | 16 | 16 | Iceland | 47 | 30 | 25 |
| Luxembourg | 10 | 64 | 66 | Switzerland | 10 | 20 | 21 | United Kingdom | 12 | 12 | 19 | Netherlands | 49 | 47 | 55 |
| Belgium | 12 | 35 | 22 | Spain | 11 | 11 | 8 | Italy | 14 | 24 | 15 | Italy | 50 | 43 | 42 |
| France | 13 | 26 | 21 | Luxembourg | 12 | 39 | 38 | Austria | 16 | 21 | 14 | Denmark | 54 | 34 | 45 |
| Denmark | 14 | 25 | 19 | Norway | 14 | 32 | 37 | Netherlands | 18 | 33 | 39 | Austria | 57 | 31 | 27 |
| Italy | 17 | 36 | 51 | United Kingdom | 18 | 24 | 22 | Cyprus | 31 | 23 | 40 | Sweden | 58 | 45 | 41 |
| Netherlands | 19 | 50 | 57 | Cyprus | 21 | 17 | 36 | Finland | 32 | 54 | 61 | Luxembourg | 61 | 75 | 75 |
| Finland | 21 | 58 | 64 | Iceland | 27 | 45 | 45 | Norway | 47 | 70 | 62 | France | 62 | 48 | 34 |
| Norway | 22 | 65 | 62 | Denmark | 29 | 47 | 43 | Spain | 56 | 63 | 52 | Spain | 66 | 54 | 54 |
| Ireland | 24 | 29 | 33 | | | | | Denmark | 66 | 72 | 69 | Norway | 67 | 68 | 61 |
| United Kingdom | 26 | 51 | 48 | | | | | Luxembourg | 70 | 76 | 76 | Switzerland | 71 | 52 | 52 |
| Cyprus | 29 | 16 | 43 | | | | | Sweden | 72 | 74 | 70 | United Kingdom | 72 | 70 | 70 |
| Iceland | 37 | 71 | 71 | | | | | Belgium | 73 | 75 | 75 | Germany | 76 | 72 | 62 |
| *South Asia* | | | | | | | | | | | | | | | |
| Sri Lanka | 33 | 10 | 13 | Sri Lanka | 26 | 4 | 3 | Sri Lanka | 37 | 35 | 37 | Sri Lanka | 43 | 56 | 66 |
| Pakistan | 71 | 56 | 52 | | | | | India | 68 | 18 | 13 | India | 73 | 5 | 6 |
| | | | | | | | | Pakistan | 74 | 73 | 66 | Pakistan | 74 | 76 | 76 |
| *Middle East and North Africa* | | | | | | | | | | | | | | | |
| Kuwait | 1 | 1 | 1 | Israel | 17 | 34 | 32 | Kuwait | 1 | 1 | 1 | Kuwait | 1 | 1 | 1 |
| Malta | 9 | 8 | 5 | Portugal | 19 | 8 | 9 | Iran, Islamic Rep. | 7 | 6 | 7 | Iran, Islamic Rep. | 3 | 3 | 2 |
| Portugal | 25 | 9 | 8 | Egypt, Arab Rep. | 22 | 10 | 12 | Malta | 17 | 28 | 22 | Morocco | 15 | 17 | 15 |
| Greece | 27 | 20 | 34 | Greece | 23 | 22 | 27 | Greece | 22 | 13 | 26 | Tunisia | 17 | 22 | 26 |
| Iran, Islamic Rep. | 30 | 15 | 18 | Tunisia | 25 | 13 | 7 | Portugal | 28 | 10 | 12 | Syrian Arab Republic | 24 | 39 | 35 |
| Israel | 31 | 69 | 68 | | | | | Tunisia | 36 | 34 | 44 | Egypt, Arab Rep. | 31 | 49 | 50 |
| Egypt, Arab Rep. | 40 | 39 | 39 | | | | | Israel | 39 | 65 | 47 | Malta | 41 | 71 | 69 |
| Tunisia | 41 | 46 | 28 | | | | | Morocco | 59 | 47 | 46 | Israel | 48 | 53 | 58 |
| Syrian Arab Republic | 43 | 53 | 31 | | | | | Egypt, Arab Rep. | 61 | 69 | 73 | Portugal | 51 | 15 | 16 |
| Morocco | 47 | 41 | 40 | | | | | Syrian Arab Republic | 64 | 71 | 56 | Greece | 52 | 26 | 21 |
| *Eastern Europe and Central Asia* | | | | | | | | | | | | | | | |

| *Social Security and Welfare* | | | | *Transfers to Orgs and HH* | | | | *Health* | | | | *Education* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
| Romania | 6 | 2 | 2 | Poland | 15 | 26 | 31 | Romania | 44 | 66 | 59 | Turkey | 22 | 10 | 12 |
| Turkey | 70 | 63 | 55 | | | | | Turkey | 63 | 50 | 48 | Romania | 56 | 67 | 51 |
| *East Asia and the Pacific* | | | | | | | | | | | | | | | |
| Japan | 16 | 11 | 14 | Australia | 20 | 41 | 41 | Australia | 20 | 55 | 64 | Malaysia | 8 | 8 | 9 |
| Australia | 28 | 70 | 72 | Korea, Rep. | 33 | 43 | 42 | Singapore | 41 | 56 | 63 | Thailand | 18 | 7 | 7 |
| Korea, Rep. | 52 | 68 | 65 | Malaysia | 37 | 38 | 35 | Malaysia | 43 | 30 | 23 | Singapore | 23 | 28 | 28 |
| Indonesia | 62 | 59 | 59 | Indonesia | 39 | 40 | 46 | Thailand | 50 | 31 | 34 | Korea, Rep. | 30 | 18 | 17 |
| Malaysia | 63 | 60 | 63 | Japan | 41 | 48 | 47 | Indonesia | 69 | 60 | 67 | Indonesia | 59 | 57 | 53 |
| Thailand | 69 | 47 | 35 | Thailand | 43 | 33 | 25 | Japan | 75 | 44 | 43 | Australia | 64 | 74 | 74 |
| Singapore | 72 | 74 | 74 | | | | | Korea, Rep. | 76 | 67 | 54 | Japan | 68 | 9 | 8 |

Orgs and HH = Organizations and households.

At the bottom of table 2a, we report the correlation matrices between R1, R2, and R3 for each of the types of safety nets. It is interesting to note that, first, the unconditional rank is not highly correlated with R2 and R3 for social security and transfers. This indicates that only looking at the unconditional shares spent by governments on safety nets can be misleading—countries may be spending more or less than we may expect them to, and R2 and R3 allow us to judge the extent to which this is the case. On the whole, R2 and R3 are highly correlated, although it is typically in exactly those cases when they are not that the most can be inferred for policy prescriptions. The fact that, in our sample, R2 and R3 are so highly correlated comes in part from the fact that our measures of institutional quality have had to be averaged over the entire sample period.

Below the correlation matrices, we report a test of the equality of the ranks using the test described in Snedecor and Cochrane (1989). The null hypothesis of the test is that the median of the differences in rank across countries is zero. The test makes no further assumptions. We report the p-value of the test at the foot of tables 2a to 2c. We generally find no significant differences across the ranks. On the whole, given the relatively small sample and the lack of movement of countries, particularly at the highest ranks, this is not altogether surprising. It is of more interest to look at the movements of individual countries, as opposed to the ranking as a whole.

So far, we have been expressing safety net expenditures as a share of GDP. In tables 2b and 2c, we consider the robustness of our results using two alternative normalizations: (i) expenditures as a share of total government expenditures, and (ii) expenditures as a share of total government tax revenues. We use these to further capture the notion of a government budget constraint. On the whole we find our rankings to be largely unchanged when we use any of these normalizations, although certain oil-dependent economies such as Kuwait perform better when we take expenditures as a share of total tax revenues. The correlation between R1 and the other rankings tends to rise when we use total expenditures as the numeraire, and tend to fall if we use tax revenues.

Tables 2d to 2e repeat the results from tables 2a to 2c except that rankings are given within each regional grouping. We have done this in order to facilitate analysis of close neighbors, in the spirit of benchmark competition. Concentrating on table 2d, where we use safety net expenditures as a share of GDP, we see that Argentina, relative to its neighbors, performs well with a rank of R1 when we only look at unconditional social security expenditures. Taking account of structural features, we find that it performs far worse relative to what Latin American countries are able to do on average. However, once its institutional features are also taken into account, it again performs relatively well. Other interesting cases are Indonesia, which appears to perform better than most of its neighbors when institutional quality is controlled for, and Kuwait, which moves in the opposite direction relative to its neighbors as we move from R1 to R3. In sub-Saharan Africa, it is Senegal that appears to have an improved relative performance once institutional quality is controlled for, and Mali which generally moves down as we move to R3.

**Graphical Representation**

The information contained in ranks one to three can also be summarized in a simple graph, as given in figure 1. The graphs show the movements across the three rankings for countries with respect to the different components of social spending, where the spending measures are

expressed as fractions of GDP. The graphs in the leftmost panels plot the R1 ranking against the R2 ranking, while the right panels plot R2 against R3. The countries far away from the leading diagonal (diagonal lines not shown) have the greatest shifts moving from one rank to another. From figure 1 we see clearly that there is more dispersion moving from rank one to rank two than from rank two to rank three on all spending measures. If a country lies a long way below the leading diagonal, then it fallen in ranking after controlling for structural (in the case of R2) or quality of government (in the case of R3). Conversely, if a country lies above the diagonal, it has improved its ranking.

The topmost panels in figure 1 plot rankings for social security and welfare expenditures. There is quite wide dispersion evident in the left top panel, indicating large changes in ranking moving from R1 to R2. For example, Norway, Canada, Cyprus, Finland, Iceland and Kuwait, among others, all appear far below the diagonal line. This suggests that after controlling for structural characteristics, these countries perform far worse than we would expect relative to the international norm—i.e., rankings fall dramatically from R1 to R2.

Countries that lie above the leading diagonal have the opposite interpretation—they spend more on social security and welfare than we would expect, controlling for structural characteristics. Countries in this category for social security and welfare spending include Sri Lanka, Senegal, and Niger.

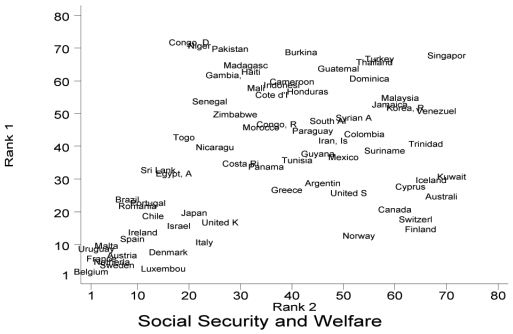
The right topmost panel plots rank two against rank three on social security and welfare spending. As most countries lie close to the leading diagonal here, we see that the correlation between the two ranks is high. The data on quality of government is simply not able to introduce that much variation. Nevertheless, in the case of social security and welfare (the top rightmost panel) it would suggest that countries such as Italy, Israel, Zimbabwe, and Mali all do worse than we would expect given their level of institutional quality. Panama, Indonesia, and Niger appear to do better than the international norm, controlling for these institutional factors in addition to structural characteristics.

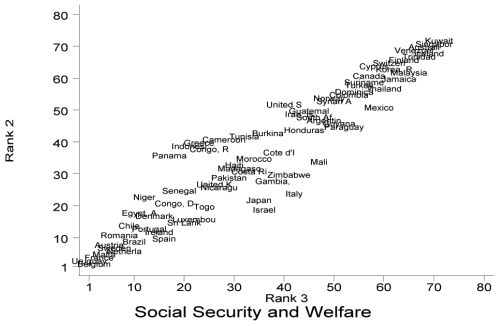
The next two panels in figure give the same ranking information for expenditures on transfers, again expressed as a fraction of GDP. Consistent with the correlation matrix shown in table 2a, we see that most of the movement is from rank one to rank two. The panels highlight that countries such as Switzerland and Australia do worse than expected given structural characteristics, and countries such as Egypt and Costa Rica do better than expected. Similarly, the last two sets of panels show the rankings for health and education expenditures as a share of GDP.

The third set of panels in figure 1 presents rankings for education expenditures. As most countries lie close to the leading diagonals, we see that there are not many strong movements across the ranks. However, there are some notable exceptions—Malta, Bahrain, and Bolivia all devote a greater share of GDP to education than we would expect given the structural features of their economy. India, Indonesia, and the United States devote fewer resources than we would expect. Controlling for institutional quality in the bottom left panel suggests that countries such as Italy, Thailand, and Peru perform worse than expected controlling for institutions. Greece, Egypt, and Norway are among the countries that perform better once institutions are controlled for.

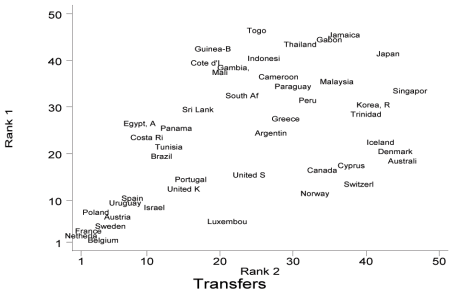
# Figure 1: Cross-Country Movements Across Rankings

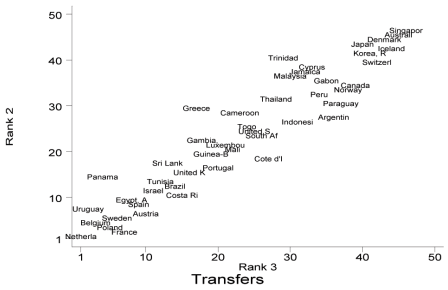
*Social Security and Welfare (share of GDP)*



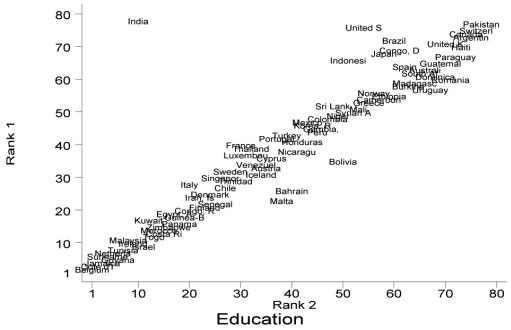



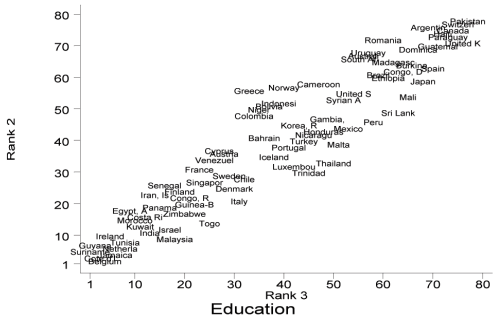

*Transfers to Organizations and Households (share of GDP)*



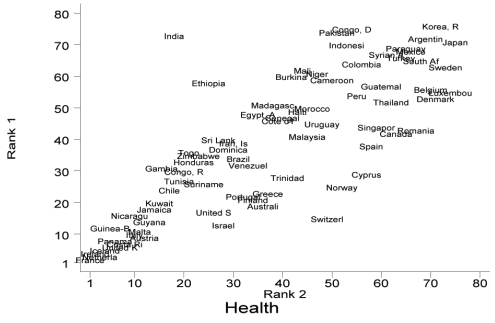



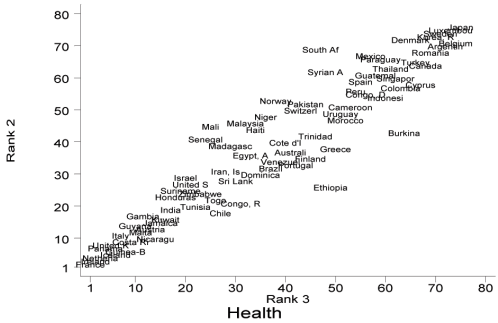

*Education (share of GDP)*




*Health (share of GDP)*



The final set of panels in figure 1 give the corresponding information for health expenditures. Again, most of the movement is from rank one to rank two. This is confirmed by the correlation coefficients for the health rankings given in table 2a.

**Regression Results**

Table 3 reports the actual regression results from (1) and (2), which are used to construct R2 and R3. These results are instructive in and of themselves. The R2 regression (equation (1)) can be thought of as estimating a demand function for safety net expenditure. We see that, for each type of safety net expenditure as a share of GDP, income is positive and significant. This suggests that as countries grow richer they spend a greater share of GDP on types of safety nets. The shock-to-GDP variable is also significant and negative, suggesting that cyclical factors play a role in determining safety net spending. In particular, safety net spending appears to be anti-cyclical, as we would expect. The other variables capture societal needs. The fraction of the population of working age tends to be negative and significant only for social security. The level of urbanization significantly increases both social security and transfers spending. This may suggest that the urban poor are better able to get the government to respond to their interests than are the rural poor.

In table 3, we also report regression (2), which is used to construct R3. This regresses the time-averaged residual from (1) on various quality-of-government measures. We see that the increased threat of expropriation and corruption significantly increase government safety net expenditures, while worsening rule of law and increased government bureaucracy decrease expenditures. The fact that expenditures may increase as quality of government decreases may suggest that there is some rent-seeking behavior occurring, or some other non-productive use of funds.

**Table 3: Cross-Country Safety Net Regressions (standard errors in parentheses)**

**Dependent Var SS/GDP**

**R2 Regressions:** $s_{ijt} = \beta X_{it} + \gamma Z_i + v_{ijt}$

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* | *Total Expenditure* |
|---|---|---|---|---|---|
| Log(GDP per capita) | 2.70 | 2.83 | 0.641 | 0.041 | 2.47 |
| | (0.288) | (0.560) | (0.122) | (0.134) | (0.77) |
| Shock to GDP per capita | –13.8 | –16.7 | 0.048 | –0.644 | –25.4 |
| | (1.98) | (3.78) | (0.849) | (0.931) | (5.23) |
| Frac. of popn aged 15-64 (millions) | –0.018 | –0.010 | –0.003 | –0.012 | –0.045 |
| | (0.010) | (0.019) | (0.002) | (0.002) | (0.013) |
| Frac. of popn residing in urban regions | 0.032 | 0.050 | –0.014 | –0.004 | 0.056 |
| | (0.018) | (0.033) | (0.008) | (0.008) | (0.048) |
| Adjusted R-squared | 0.6166 | 0.5497 | 0.1715 | 0.1058 | 0.1937 |
| Observations | 256 | 101 | 266 | 266 | 303 |

**R3 Regressions:** $\hat{v}_{ij.} = \gamma + \delta Q_{i.} + \omega_{ij.}$

**(dependent variable is time-averaged residual from R2 regression)**

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* | *Total Expenditure* |
|---|---|---|---|---|---|
| Repudiation of Government Contract | 0.048 | 0.782 | 0.507 | 0.291 | –0.626 |
| | (0.394) | (0.740) | (0.164) | (0.159) | (0.981) |
| Expropriation Threat | 0.328 | –0.905 | –0.264 | –0.388 | –0.129 |
| | (0.401) | (0.816) | (0.166) | (0.161) | (1.04) |
| Corruption | 0.336 | 1.69 | 0.030 | –0.233 | 0.769 |
| | (0.360) | (0.766) | (0.196) | (0.146) | (0.960) |
| Rule of Law | –0.873 | 0.194 | –0.025 | –0.072 | –0.807 |
| | (0.406) | (0.882) | (0.161) | (0.156) | (1.03) |
| Government Bureaucracy | –0.368 | –0.955 | –0.294 | 0.136 | 0.315 |
| | (0.401) | (0.709) | (0.166) | (0.161) | (1.04) |
| Constant | –6.15 | –4.65 | –2.29 | 0.739 | –1.02 |
| | (3.03) | (6.85) | (0.125) | (1.208) | (7.94) |
| Adjusted R-squared | 0.0295 | 0.0233 | 0.0243 | 0.0527 | 0.0000 |
| Observations | 224 | 90 | 233 | 233 | 265 |

**Dependent Var SS/Total Government Expenditure**

**R2 Regressions:** $s_{ijt} = \beta X_{it} + \gamma Z_i + v_{ijt}$

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* |
|---|---|---|---|---|
| Log(GDP per capita) | 0.068 | 0.054 | 0.015 | –0.009 |
| | (0.008) | (0.013) | (0.003) | (0.004) |
| Shock to GDP per capita | –0.210 | –0.334 | 0.056 | 0.108 |
| | (0.054) | (0.088) | (0.024) | (0.026) |
| Frac. of popn aged 15–64 (millions) | 0.0001 | 0.0001 | –0.0001 | –0.0004 |
| | (0.0003) | (0.0004) | (0.0001) | (0.0001) |
| Frac. of popn residing in urban regions | 0.0008 | 0.002 | –0.001 | –0.0005 |
| | (0.0005) | (0.001) | (0.0002) | (0.0002) |
| Adjusted R–squared | 0.5845 | 0.5366 | 0.1259 | 0.2982 |
| Observations | 256 | 100 | 266 | 266 |

**R3 Regressions:** $\hat{v}_{ij.} = \gamma + \delta Q_{i.} + \omega_{ij.}$

**(dependent variable is time-averaged residual from R2 regression)**

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* |
|---|---|---|---|---|
| Repudiation of Government Contract | –0.005 | –0.007 | 0.021 | 0.018 |
| | (0.011) | (0.017) | (0.005) | (0.005) |
| Expropriation Threat | 0.030 | 0.012 | –0.012 | –0.018 |
| | (0.011) | (0.019) | (0.005) | (0.005) |
| Corruption | 0.010 | 0.040 | –0.003 | –0.009 |
| | (0.010) | (0.017) | (0.004) | (0.004) |
| Rule of Law | –0.019 | 0.008 | 0.001 | 0.003 |
| | (0.011) | (0.020) | (0.005) | (0.005) |
| Government Bureaucracy | –0.025 | –0.044 | –0.006 | 0.005 |
| | (0.011) | (0.016) | (0.005) | (0.005) |
| Constant | –0.242 | –0.224 | –0.053 | –0.012 |
| | (0.081) | (0.156) | (0.036) | (0.037) |
| Adjusted R-squared | 0.0465 | 0.0629 | 0.0871 | 0.0776 |
| Observations | 224 | 89 | 233 | 233 |

**Dependent Var SS/Total Tax Revenues**

**R2 Regressions:** $s_{ijt} = \beta X_{it} + \gamma Z_i + v_{ijt}$

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* |
|---|---|---|---|---|
| Log(GDP per capita) | 0.066 | 0.061 | 0.010 | –0.033 |
| | (0.010) | (0.016) | (0.006) | (0.009) |
| Shock to GDP per capita | –0.268 | –0.312 | 0.007 | 0.003 |
| | (0.070) | (0.110) | (0.043) | (0.061) |
| Frac. of popn aged 15–64 (millions) | 0.0003 | 0.0004 | –0.0002 | –0.0001 |
| | (0.0004) | (0.001) | (0.0001) | (0.0001) |
| Frac. of popn residing in urban regions | 0.002 | 0.002 | –0.0003 | 0.0002 |
| | (0.0006) | (0.001) | (0.0004) | (0.001) |
| Adjusted R-squared | 0.5270 | 0.4847 | 0.0176 | 0.1941 |
| Observations | 256 | 101 | 266 | 266 |

**R3 Regressions:** $\hat{v}_{ij.} = \gamma + \delta Q_{i.} + \omega_{ij.}$

**(dependent variable is time-averaged residual from R2 regression)**

| *Independent Variables* | *Social Spending* | *Transfers to Orgs & HH* | *Health* | *Education* |
|---|---|---|---|---|
| Repudiation of Government Contract | –0.011 | –0.001 | 0.024 | 0.011 |
| | (0.014) | (0.021) | (0.009) | (0.012) |
| Expropriation Threat | 0.041 | 0.014 | –0.011 | –0.012 |
| | (0.014) | (0.023) | (0.009) | (0.012) |
| Corruption | 0.011 | 0.050 | –0.010 | –0.014 |
| | (0.012) | (0.022) | (0.008) | (0.011) |
| Rule of Law | –0.011 | 0.009 | 0.004 | –0.001 |
| | (0.014) | (0.025) | (0.008) | (0.012) |
| Government Bureaucracy | –0.040 | –0.064 | –0.006 | 0.011 |
| | (0.014) | (0.020) | (0.009) | (0.012) |
| Constant | –0.273 | –0.336 | –0.040 | 0.060 |
| | (0.105) | (0.193) | (0.065) | (0.089) |
| Adjusted R-squared | 0.0576 | 0.0792 | 0.0176 | 0.0000 |
| Observations | 224 | 90 | 266 | 233 |

*Note:* All first-stage regressions also include a set of continental dummies, the omitted group being Western Europe.

The remainder of table 3 gives the same set of results with safety nets expressed as shares of total government expenditures and total tax revenues, respectively. The results are broadly in line with the previous ones. Income continues to have positive and significant effects on safety net spending, as does the level of urbanization; when expenditures are normalized by tax revenues, they are also found to be anti-cyclical. Both social security and transfers increase with the size of the working-age population.

In terms of the quality-of-institutions regression (2), social security increases as the threat of expropriation increases and decreases significantly as the rule of law worsens or government bureaucracy increases. Transfers decrease as government bureaucracy or corruption worsens. Overall, it is clear that institutional quality can explain some of the variation in safety net expenditures that cannot be explained when we control only for structural features of the economy. Even using such poor data with no variation over time, we find these effects to be present.

Similarly, it is also reassuring to find that, on the whole, the results are robust to the exact normalization used to measure social safety net expenditures, be it as a share of GDP, total expenditures, or total tax revenues.

To summarize, although at first glance it is somewhat surprising that we find weak income effects on the whole, this may not be altogether unexpected given that we have dependent variables expressed as shares. This is also true for the lack of cyclicality that we find in most safety net expenditures, and generally we find that safety nets do respond to the level of need in a country.

On the institutional side, the fact that we find some expenditures increasing with corruption may well be indicative of rent-seeking behavior in that, if government officials are corrupt, they may make payments to themselves by inflating expenditure levels. The fact that we control for this in (2) ensures that this possibility is also accounted for in R3. The single best measure of institutional quality appears to be government bureaucracy, whereas the repudiation of government contracts has no significant effect on any type of safety net. Given that our measure of government bureaucracy may be more closely related to governments' ability to effectively target expenditures on the poor, while repudiation of government contracts has more influence on the activities of the private sector, our regression results from (2) are in line with expectations.

**Welfare Outcome Ranks**

Tables 4a and 4b report the cross-country welfare outcome ranks for life expectancy at birth and infant mortality rates, respectively. Again, the interpretation is exactly as that for safety net expenditures. On life expectancy, we see Iceland has the highest unconditional life expectancy (the time-averaged life expectancy over our sample period), while Ethiopia has the lowest. As expected, Western Europe and North America are at the top of the ranking, with sub-Saharan Africa and South Asian countries forming the lowest unconditional rankings.

**Table 4a: Cross-Country Welfare Outcome Regressions: Life Expectancy at Birth**

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Iceland | 1 | 51 | 58 | *Latin America and the Caribbean* | | | |
| Sweden | 2 | 58 | 57 | Costa Rica | 28 | 3 | 2 |
| Norway | 3 | 35 | 27 | Uruguay | 29 | 34 | 47 |
| Netherlands | 4 | 62 | 81 | Jamaica | 32 | 2 | 7 |
| Switzerland | 5 | 59 | 38 | Argentina | 35 | 71 | 73 |
| Japan | 6 | 64 | 82 | Panama | 37 | 8 | 9 |
| Canada | 7 | 42 | 46 | Trinidad and Tobago | 38 | 32 | 29 |
| France | 8 | 60 | 39 | Venezuela RB | 41 | 49 | 48 |
| Spain | 9 | 26 | 54 | Chile | 42 | 47 | 50 |
| Australia | 10 | 66 | 67 | Paraguay | 43 | 6 | 6 |
| Denmark | 11 | 74 | 49 | Mexico | 46 | 61 | 77 |
| Italy | 12 | 36 | 63 | Suriname | 47 | 10 | 14 |
| Greece | 13 | 13 | 19 | Colombia | 50 | 28 | 26 |
| Israel | 14 | 46 | 65 | Dominican Republic | 52 | 22 | 15 |
| Cyprus | 15 | 5 | 16 | Ecuador | 54 | 21 | 23 |
| Belgium | 16 | 81 | 70 | Brazil | 55 | 83 | 90 |
| United Kingdom | 17 | 72 | 64 | Guyana | 57 | 9 | 10 |
| New Zealand | 18 | 63 | 66 | El Salvador | 62 | 39 | 45 |

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Hong Kong, China | 19 | 40 | 44 | Peru | 65 | 87 | 97 |
| United States | 20 | 91 | 75 | Honduras | 66 | 24 | 21 |
| Austria | 21 | 65 | 56 | Nicaragua | 67 | 23 | 32 |
| Germany | 22 | 79 | 83 | Guatemala | 71 | 69 | 68 |
| Ireland | 23 | 19 | 25 | Haiti | 81 | 68 | 60 |
| Malta | 24 | 18 | 12 | | | | |
| Finland | 25 | 43 | 61 | *Sub-Saharan Africa* | | | |
| Luxembourg | 26 | 89 | 94 | South Africa | 70 | 93 | 85 |
| Singapore | 27 | 86 | 79 | Botswana | 76 | 31 | 22 |
| Costa Rica | 28 | 3 | 2 | Ghana | 77 | 53 | 62 |
| Uruguay | 29 | 34 | 47 | Zimbabwe | 78 | 30 | 34 |
| Poland | 30 | 11 | 5 | Kenya | 79 | 16 | 18 |
| Portugal | 31 | 12 | 13 | Madagascar | 82 | 38 | 33 |
| Jamaica | 32 | 2 | 7 | Cameroon | 84 | 78 | 72 |
| Kuwait | 33 | 82 | 86 | Congo, Dem. Rep. | 85 | 80 | 80 |
| Hungary | 34 | 14 | 8 | Gabon | 86 | 103 | 103 |
| Argentina | 35 | 71 | 73 | Congo, Rep. | 87 | 94 | 95 |
| Romania | 36 | 4 | 3 | Uganda | 88 | 27 | 36 |
| Panama | 37 | 8 | 9 | Sudan | 89 | 41 | 55 |
| Trinidad and Tobago | 38 | 32 | 29 | Togo | 90 | 73 | 71 |
| Sri Lanka | 39 | 1 | 1 | Cote d'Ivoire | 91 | 95 | 96 |
| Jordan | 40 | 15 | 20 | Nigeria | 92 | 84 | 69 |
| Venezuela RB | 41 | 49 | 48 | Senegal | 93 | 97 | 87 |
| Chile | 42 | 47 | 50 | Mozambique | 94 | 67 | 74 |
| Paraguay | 43 | 6 | 6 | Mali | 95 | 90 | 88 |
| United Arab Emirates | 44 | 99 | 98 | Malawi | 96 | 70 | 84 |
| Qatar | 45 | 100 | 99 | Burkina Faso | 97 | 77 | 92 |
| México | 46 | 61 | 77 | Gambia, The | 98 | 92 | 93 |
| Suriname | 47 | 10 | 14 | Ethiopia | 99 | 44 | 35 |
| Malaysia | 48 | 17 | 17 | Niger | 100 | 96 | 89 |
| Korea, Rep. | 49 | 48 | 43 | Guinea | 101 | 98 | 100 |
| Colombia | 50 | 28 | 26 | Guinea-Bissau | 102 | 88 | 91 |
| China | 51 | 29 | 42 | Sierra Leone | 103 | 102 | 101 |
| Dominican Republic | 52 | 22 | 15 | | | | |
| Thailand | 53 | 7 | 4 | *North America* | | | |
| Ecuador | 54 | 21 | 23 | Canada | 7 | 42 | 46 |
| Brazil | 55 | 83 | 90 | United States | 20 | 91 | 75 |
| Philippines | 56 | 25 | 30 | | | | |
| Guyana | 57 | 9 | 10 | *Western Europe* | | | |
| Tunisia | 58 | 55 | 28 | Iceland | 1 | 51 | 58 |
| Turkey | 59 | 54 | 31 | Sweden | 2 | 58 | 57 |
| Syrian Arab Republic | 60 | 20 | 11 | Norway | 3 | 35 | 27 |
| Iran, Islamic Rep. | 61 | 37 | 37 | Netherlands | 4 | 62 | 81 |
| El Salvador | 62 | 39 | 45 | Switzerland | 5 | 59 | 38 |
| Saudi Arabia | 63 | 101 | 102 | France | 8 | 60 | 39 |
| Algeria | 64 | 50 | 59 | Spain | 9 | 26 | 54 |
| Peru | 65 | 87 | 97 | Denmark | 11 | 74 | 49 |
| Honduras | 66 | 24 | 21 | Italy | 12 | 36 | 63 |
| Nicaragua | 67 | 23 | 32 | Cyprus | 15 | 5 | 16 |
| Oman | 68 | 85 | 78 | Belgium | 16 | 81 | 70 |

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Morocco | 69 | 52 | 52 | United Kingdom | 17 | 72 | 64 |
| South Africa | 70 | 93 | 85 | Austria | 21 | 65 | 56 |
| Guatemala | 71 | 69 | 68 | Germany | 22 | 79 | 83 |
| Egypt, Arab Rep. | 72 | 57 | 40 | Ireland | 23 | 19 | 25 |
| Indonesia | 73 | 56 | 51 | Finland | 25 | 43 | 61 |
| India | 74 | 75 | 76 | Luxembourg | 26 | 89 | 94 |
| Pakistan | 75 | 33 | 24 | | | | |
| Botswana | 76 | 31 | 22 | *South Asia* | | | |
| Ghana | 77 | 53 | 62 | Sri Lanka | 39 | 1 | 1 |
| Zimbabwe | 78 | 30 | 34 | India | 74 | 75 | 76 |
| Kenya | 79 | 16 | 18 | Pakistan | 75 | 33 | 24 |
| Papua New Guinea | 80 | 76 | 53 | Bangladesh | 83 | 45 | 41 |
| Haiti | 81 | 68 | 60 | | | | |
| Madagascar | 82 | 38 | 33 | *Middle East and North Africa* | | | |
| Bangladesh | 83 | 45 | 41 | Greece | 13 | 13 | 19 |
| Cameroon | 84 | 78 | 72 | Israel | 14 | 46 | 65 |
| Congo, Dem. Rep. | 85 | 80 | 80 | Malta | 24 | 18 | 12 |
| Gabon | 86 | 103 | 103 | Portugal | 31 | 12 | 13 |
| Congo, Rep. | 87 | 94 | 95 | Kuwait | 33 | 82 | 86 |
| Uganda | 88 | 27 | 36 | Jordan | 40 | 15 | 20 |
| Sudan | 89 | 41 | 55 | United Arab Emirates | 44 | 99 | 98 |
| Togo | 90 | 73 | 71 | Qatar | 45 | 100 | 99 |
| Cote d'Ivoire | 91 | 95 | 96 | Tunisia | 58 | 55 | 28 |
| Nigeria | 92 | 84 | 69 | Syrian Arab Republic | 60 | 20 | 11 |
| Senegal | 93 | 97 | 87 | Iran, Islamic Rep. | 61 | 37 | 37 |
| Mozambique | 94 | 67 | 74 | Saudi Arabia | 63 | 101 | 102 |
| Mali | 95 | 90 | 88 | Algeria | 64 | 50 | 59 |
| Malawi | 96 | 70 | 84 | Oman | 68 | 85 | 78 |
| Burkina Faso | 97 | 77 | 92 | Morocco | 69 | 52 | 52 |
| Gambia, The | 98 | 92 | 93 | Egypt, Arab Rep. | 72 | 57 | 40 |
| Ethiopia | 99 | 44 | 35 | | | | |
| Niger | 100 | 96 | 89 | *Eastern Europe and Central Asia* | | | |
| Guinea | 101 | 98 | 100 | Poland | 30 | 11 | 5 |
| Guinea-Bissau | 102 | 88 | 91 | Hungary | 34 | 14 | 8 |
| Sierra Leone | 103 | 102 | 101 | Romania | 36 | 4 | 3 |
| | | | | Turkey | 59 | 54 | 31 |
| *Correlation matrix* | | | | | | | |
| | rank1 | rank2 | rank3 | *East Asia and the Pacific* | | | |
| rank1 | 1 | | | Japan | 6 | 64 | 82 |
| rank2 | 0.3011 | 1 | | Australia | 10 | 66 | 67 |
| rank3 | 0.2581 | 0.9327 | 1 | New Zealand | 18 | 63 | 66 |
| | | | | Hong Kong, China | 19 | 40 | 44 |
| *Rank test (p-value)* | | | | Singapore | 27 | 86 | 79 |
| rank1=rank2 | 0.0756 | | | Malaysia | 48 | 17 | 17 |
| rank2=rank3 | 1 | | | Korea, Rep. | 49 | 48 | 43 |
| | | | | China | 51 | 29 | 42 |
| | | | | Thailand | 53 | 7 | 4 |
| | | | | Philippines | 56 | 25 | 30 |
| | | | | Indonesia | 73 | 56 | 51 |
| | | | | Papua New Guinea | 80 | 76 | 53 |

## Table 4b: Cross-Country Welfare Outcome Regressions: Infant Mortality Rate

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Sweden | 1 | 56 | 58 | *Latin America and the Caribbean* | | | |
| Iceland | 2 | 52 | 60 | Costa Rica | 33 | 8 | 7 |
| Finland | 3 | 29 | 35 | Uruguay | 35 | 40 | 67 |
| Netherlands | 4 | 66 | 81 | Trinidad and Tobago | 37 | 30 | 29 |
| Norway | 5 | 39 | 33 | Panama | 38 | 16 | 14 |
| Japan | 6 | 65 | 77 | Jamaica | 39 | 6 | 16 |
| Switzerland | 7 | 63 | 40 | Argentina | 41 | 75 | 83 |
| Denmark | 8 | 67 | 44 | Venezuela RB | 42 | 44 | 48 |
| Australia | 9 | 62 | 66 | Suriname | 44 | 7 | 18 |
| France | 10 | 60 | 42 | Paraguay | 45 | 9 | 9 |
| United Kingdom | 11 | 64 | 50 | Chile | 46 | 69 | 68 |
| New Zealand | 12 | 50 | 56 | Colombia | 47 | 28 | 25 |
| Canada | 13 | 45 | 47 | Mexico | 50 | 73 | 85 |
| Singapore | 14 | 53 | 45 | Guyana | 56 | 17 | 13 |
| Luxembourg | 15 | 80 | 86 | Brazil | 57 | 90 | 93 |
| Ireland | 16 | 21 | 23 | Ecuador | 58 | 43 | 54 |
| Hong Kong, China | 17 | 36 | 34 | Dominican Republic | 59 | 58 | 39 |
| Belgium | 18 | 77 | 61 | El Salvador | 64 | 49 | 62 |
| United States | 19 | 85 | 69 | Honduras | 65 | 32 | 28 |
| Germany | 20 | 76 | 74 | Peru | 66 | 93 | 97 |
| Austria | 21 | 54 | 46 | Nicaragua | 67 | 31 | 36 |
| Israel | 22 | 46 | 65 | Guatemala | 69 | 57 | 51 |
| Malta | 23 | 19 | 11 | Haiti | 90 | 83 | 80 |
| Spain | 24 | 34 | 64 | | | | |
| Cyprus | 25 | 13 | 26 | *Sub-Saharan Africa* | | | |
| Italy | 26 | 48 | 72 | South Africa | 54 | 70 | 49 |
| Greece | 27 | 24 | 37 | Botswana | 60 | 22 | 15 |
| Hungary | 28 | 18 | 10 | Zimbabwe | 62 | 10 | 12 |
| Poland | 29 | 11 | 4 | Kenya | 70 | 5 | 8 |
| Korea, Rep. | 30 | 23 | 21 | Ghana | 74 | 33 | 53 |
| Malaysia | 31 | 4 | 5 | Congo, Rep. | 76 | 55 | 55 |
| Portugal | 32 | 20 | 22 | Sudan | 78 | 15 | 17 |
| Costa Rica | 33 | 8 | 7 | Cameroon | 79 | 47 | 52 |
| Kuwait | 34 | 79 | 82 | Uganda | 81 | 26 | 27 |
| Uruguay | 35 | 40 | 67 | Togo | 82 | 59 | 57 |
| Romania | 36 | 2 | 2 | Senegal | 83 | 51 | 30 |
| Trinidad and Tobago | 37 | 30 | 29 | Nigeria | 85 | 61 | 43 |
| Panama | 38 | 16 | 14 | Congo, Dem. Rep. | 86 | 74 | 70 |
| Jamaica | 39 | 6 | 16 | Cote d'Ivoire | 87 | 86 | 84 |
| Sri Lanka | 40 | 1 | 1 | Gabon | 91 | 102 | 102 |
| Argentina | 41 | 75 | 83 | Burkina Faso | 93 | 38 | 71 |
| Venezuela RB | 42 | 44 | 48 | Madagascar | 94 | 68 | 59 |
| Jordan | 43 | 12 | 20 | Ethiopia | 95 | 42 | 32 |
| Suriname | 44 | 7 | 18 | Gambia, The | 96 | 91 | 92 |

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Paraguay | 45 | 9 | 9 | Niger | 97 | 94 | 89 |
| Chile | 46 | 69 | 68 | Mozambique | 98 | 71 | 76 |
| Colombia | 47 | 28 | 25 | Guinea | 99 | 98 | 100 |
| Qatar | 48 | 95 | 95 | Guinea-Bissau | 100 | 88 | 87 |
| Philippines | 49 | 14 | 19 | Malawi | 101 | 92 | 96 |
| Mexico | 50 | 73 | 85 | Mali | 102 | 99 | 98 |
| China | 51 | 27 | 41 | Sierra Leone | 103 | 103 | 101 |
| Thailand | 52 | 3 | 3 | | | | |
| United Arab Emirates | 53 | 100 | 99 | *North America* | | | |
| South Africa | 54 | 70 | 49 | Canada | 13 | 45 | 47 |
| Syrian Arab Republic | 55 | 25 | 6 | United States | 19 | 85 | 69 |
| Guyana | 56 | 17 | 13 | | | | |
| Brazil | 57 | 90 | 93 | *Western Europe* | | | |
| Ecuador | 58 | 43 | 54 | Sweden | 1 | 56 | 58 |
| Dominican Republic | 59 | 58 | 39 | Iceland | 2 | 52 | 60 |
| Botswana | 60 | 22 | 15 | Finland | 3 | 29 | 35 |
| Saudi Arabia | 61 | 101 | 103 | Netherlands | 4 | 66 | 81 |
| Zimbabwe | 62 | 10 | 12 | Norway | 5 | 39 | 33 |
| Oman | 63 | 84 | 78 | Switzerland | 7 | 63 | 40 |
| El Salvador | 64 | 49 | 62 | Denmark | 8 | 67 | 44 |
| Honduras | 65 | 32 | 28 | France | 10 | 60 | 42 |
| Peru | 66 | 93 | 97 | United Kingdom | 11 | 64 | 50 |
| Nicaragua | 67 | 31 | 36 | Luxembourg | 15 | 80 | 86 |
| Tunisia | 68 | 82 | 63 | Ireland | 16 | 21 | 23 |
| Guatemala | 69 | 57 | 51 | Belgium | 18 | 77 | 61 |
| Kenya | 70 | 5 | 8 | Germany | 20 | 76 | 74 |
| Indonesia | 71 | 35 | 31 | Austria | 21 | 54 | 46 |
| Iran, Islamic Rep. | 72 | 72 | 73 | Spain | 24 | 34 | 64 |
| Papua New Guinea | 73 | 37 | 24 | Cyprus | 25 | 13 | 26 |
| Ghana | 74 | 33 | 53 | Italy | 26 | 48 | 72 |
| Algeria | 75 | 87 | 88 | | | | |
| Congo, Rep. | 76 | 55 | 55 | *South Asia* | | | |
| Morocco | 77 | 78 | 79 | Sri Lanka | 40 | 1 | 1 |
| Sudan | 78 | 15 | 17 | India | 84 | 89 | 91 |
| Cameroon | 79 | 47 | 52 | Bangladesh | 89 | 41 | 38 |
| Turkey | 80 | 97 | 90 | Pakistan | 92 | 81 | 75 |
| Uganda | 81 | 26 | 27 | | | | |
| Togo | 82 | 59 | 57 | *Middle East and North Africa* | | | |
| Senegal | 83 | 51 | 30 | Israel | 22 | 46 | 65 |
| India | 84 | 89 | 91 | Malta | 23 | 19 | 11 |
| Nigeria | 85 | 61 | 43 | Greece | 27 | 24 | 37 |
| Congo, Dem. Rep. | 86 | 74 | 70 | Portugal | 32 | 20 | 22 |
| Cote d'Ivoire | 87 | 86 | 84 | Kuwait | 34 | 79 | 82 |
| Egypt, Arab Rep. | 88 | 96 | 94 | Jordan | 43 | 12 | 20 |
| Bangladesh | 89 | 41 | 38 | Qatar | 48 | 95 | 95 |
| Haiti | 90 | 83 | 80 | United Arab Emirates | 53 | 100 | 99 |
| Gabon | 91 | 102 | 102 | Syrian Arab Republic | 55 | 25 | 6 |
| Pakistan | 92 | 81 | 75 | Saudi Arabia | 61 | 101 | 103 |
| Burkina Faso | 93 | 38 | 71 | Oman | 63 | 84 | 78 |
| Madagascar | 94 | 68 | 59 | Tunisia | 68 | 82 | 63 |

| *Name* | *Rank1* | *Rank2* | *Rank3* | *Name* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|---|---|---|---|
| Ethiopia | 95 | 42 | 32 | Iran, Islamic Rep. | 72 | 72 | 73 |
| Gambia, The | 96 | 91 | 92 | Algeria | 75 | 87 | 88 |
| Níger | 97 | 94 | 89 | Morocco | 77 | 78 | 79 |
| Mozambique | 98 | 71 | 76 | Egypt, Arab Rep. | 88 | 96 | 94 |
| Guinea | 99 | 98 | 100 | | | | |
| Guinea-Bissau | 100 | 88 | 87 | *Eastern Europe and Central Asia* | | | |
| Malawi | 101 | 92 | 96 | Hungary | 28 | 18 | 10 |
| Mali | 102 | 99 | 98 | Poland | 29 | 11 | 4 |
| Sierra Leone | 103 | 103 | 101 | Romania | 36 | 2 | 2 |
| | | | | Turkey | 80 | 97 | 90 |
| *Correlation matrix* | | | | | | | |
| | rank1 | rank2 | rank3 | *East Asia and the Pacific* | | | |
| Rank1 | 1 | | | Japan | 6 | 65 | 77 |
| Rank2 | 0.3329 | 1 | | Australia | 9 | 62 | 66 |
| Rank3 | 0.3148 | 0.9267 | 1 | New Zealand | 12 | 50 | 56 |
| | | | | Singapore | 14 | 53 | 45 |
| *Rank test (p-value)* | | | | Hong Kong, China | 17 | 36 | 34 |
| Rank1=rank2 | 0.1933 | | | Korea, Rep. | 30 | 23 | 21 |
| Rank2=rank3 | 0.9179 | | | Malaysia | 31 | 4 | 5 |
| | | | | Philippines | 49 | 14 | 19 |
| | | | | China | 51 | 27 | 41 |
| | | | | Thailand | 52 | 3 | 3 |
| | | | | Indonesia | 71 | 35 | 31 |
| | | | | Papua New Guinea | 73 | 37 | 24 |

When we control for structural characteristics, we find that many developing countries, such as Paraguay, Jamaica, Sri Lanka, and Madagascar, do far better than we would expect compared to the regional norm, and most developed economies drop significantly in rank from R1 to R2. This is in part driven by the fact that there is a biological upper bound on life expectancy, so that the there are probably diminishing marginal benefits from increases in safety net expenditures on this welfare indicator. However, this does not disguise the fact that many developing countries actually do have higher life expectancies, conditional on structural characteristics relative to regional norms, than we would typically believe from just examining unconditional figures (R1). There tends to be relatively little movement from R2 to R3 (these ranks have a correlation of .95), suggesting that most of the variation that we observe in life expectancy figures across countries is due to differences in these structural characteristics rather than being driven by institutional factors.

The pattern of analysis is very similar in table 4b when we look at IMR. Again, most of the variation in the welfare indicator is due to structural features, not institutions. Examining the regional results, we see that Malaysia, despite having a high unconditional level of IMR, actually is one of the best performers in its region once we condition for structural factors. This is in contrast to Indonesia, which, although it does improve its rank moving to R2, it falls further behind Malaysia. In Latin America and the Caribbean, Trinidad and Tobago's apparently good unconditional record on IMR actually is far worse than we would expect once structural factors are accounted for, i.e., given its economic characteristics, we would expect it to perform far better than it does given what other countries manage to achieve on average.

**Welfare Outcome Regression Results**

Table 5 reports the regressions (5) and (6) from which we have derived R2 and R3 above. For life expectancy at birth, we see that this is increasing in both health and education spending, state income per capita, it is pro-cyclical, and increases as the proportion of the population that is of working age increases, or the level of urbanization increases. In regression (6) when we see how much of the unexplained variation from (5) can be accounted for by quality of government factors, none of the factors turn out to be significant. This is consistent with our earlier observation that most of the movement across ranks occurs between R1 and R2. A similar set of factors is significant in the IMR regressions, although here the threat of expropriation surprisingly decreases IMR, while worsening rule of law and government bureaucracy increase it. Again, in line with our earlier results on safety net expenditures, it is the level of government bureaucracy which is the single most important determinant among the quality-of-government variables controlled for.

**Table 5: Cross-Country Outcome Regressions**

| | *Life Expectancy at Birth* | | *Infant Mortality Rate* | |
|---|---|---|---|---|
| *Independent Variables* | *R2 Regression* | *R3 Regression* | *R2 Regression* | *R3 Regression* |
| Log(GDP per capita) | 4.48 | | –19.6 | |
| | (0.304) | | (10.54) | |
| Shock to GDP per capita | –3.30 | | 20.5 | |
| | (2.01) | | (10.2) | |
| Frac. of popn aged 15–64 (millions) | 0.023 | | –0.094 | |
| | (0.004) | | (0.018) | |
| Frac. of popn residing in urban regions | 0.151 | | –0.621 | |
| | (0.018) | | (0.092) | |
| Adjusted R-squared | 0.7517 | | 0.6812 | |
| Observations | 618 | | 618 | |
| Repudiation of Government Contract | | 0.184 | | 0.074 |
| | | (0.362) | | (1.85) |
| Expropriation Threat | | 1.14 | | –7.39 |
| | | (0.413) | | (2.10) |
| Corruption | | –0.172 | | 0.897 |
| | | (0.351) | | (1.79) |
| Rule of Law | | –0.449 | | 3.29 |
| | | (0.413) | | (2.10) |
| Government Bureaucracy | | –1.64 | | 6.89 |
| | | (0.389) | | (1.98) |
| Adjusted R-squared | | 0.0667 | | 0.0557 |
| Observations | | 525 | | 526 |

**Robustness Checks**

In order to see how sensitive our rankings were to our data, we decided to re-run our analysis using a slightly different set of quality-of-government indices. This was done in two ways: (i) using different subsets of the existing quality indices; and (ii) using a measure of corruption taken from a more independent source than the ICRG, namely Transparency International (TI).

There was no significant difference created in each of the cross-country ranks reported, either in terms of safety net expenditure or welfare outcome rankings. Using the corruption measure from TI also gave similar results. Typically, the correlation coefficient between the rankings using the corruption index from the ICRG data and that from the TI data was over 0.94.

### *Indian State-Level Analysis*

We now turn to the same analysis but at the level of Indian states. Our data set runs over the period 1960–92, and because of the much more complete series that we have at this level compared to the cross-country-level analysis, there was no need to average the data into five-year time periods. The data series come from Indian government sources, details of which are in the data appendix. This analysis allows us to control for common macroeconomic shocks and institutional features across Indian states. The analysis suggests how our methodology can apply equally to sub-national policy, where the notions of benchmarking and yardstick competition apply equally as to across neighboring countries.

**Table 6: Indian State Safety Net Expenditures (as percentage of state GDP)**

| *States* | *Food* | *Calamity* | *Health* | *Education* | *Social* | *Development*[1] |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 0.171 | 3.941 | 11.254 | 28.800 | 78.707 | 101.001 |
| Assam | 0.269 | 3.420 | 10.379 | 32.780 | 69.769 | 95.211 |
| Bihar | 0.089 | 1.491 | 5.827 | 18.881 | 42.460 | 52.372 |
| Gujarat | 1.226 | 5.217 | 11.898 | 33.496 | 80.301 | 110.321 |
| Haryana | 0.524 | 2.840 | 14.429 | 37.040 | 77.812 | 137.947 |
| Jammu & Kashmir | 5.503 | 3.585 | 24.090 | 47.263 | 110.165 | 203.648 |
| Karnataka | 1.028 | 1.663 | 11.188 | 30.727 | 73.647 | 99.715 |
| Kerala | 0.304 | 1.662 | 12.660 | 45.097 | 87.682 | 97.656 |
| Madhya Pradesh | 0.201 | 1.383 | 10.030 | 23.239 | 59.176 | 80.183 |
| Maharashtra | 0.371 | 2.752 | 13.087 | 32.640 | 76.794 | 106.728 |
| Orissa | 0.347 | 4.673 | 10.815 | 25.597 | 69.502 | 91.134 |
| Punjab | 0.057 | 4.978 | 15.386 | 43.145 | 95.059 | 134.557 |
| Rajasthan | 0.252 | 4.997 | 11.279 | 25.408 | 59.127 | 79.201 |
| Tamil Nadu | 2.641 | 1.479 | 13.313 | 34.087 | 83.611 | 110.387 |
| Uttar Pradesh | 0.015 | 1.505 | 8.133 | 21.720 | 49.783 | 66.795 |
| West Bengal | 0.104 | 3.430 | 12.594 | 29.704 | 74.706 | 84.795 |
| All States | 0.819 | 3.064 | 12.273 | 31.851 | 74.269 | 103.228 |

1. Development expenditures can be greater than 100% of state GDP if net development transfers are positive.

| | *Public Food Distribution ('000 tons)* | | | | *Voter Turnout* | |
|---|---|---|---|---|---|---|
| ***States*** | *Mean* | *Sd* | *Min* | *Max* | *Mean* | *Sd* |
| Andhra Pradesh | 618.14 | 595.17 | 33 | 2451 | 68.719 | 3.515 |
| Assam | 402.09 | 209.79 | 68 | 823 | 62.978 | 11.530 |
| Bihar | 665.58 | 304.74 | 304 | 2092 | 51.764 | 5.903 |
| Gujarat | 572.39 | 363.08 | 142 | 1402 | 55.906 | 5.678 |
| Haryana | 121.74 | 53.94 | 15 | 209 | 67.431 | 5.108 |
| Jammu & Kashmir | 225.72 | 105.65 | 71 | 447 | 68.965 | 5.533 |
| Karnataka | 532.94 | 343.11 | 43 | 1165 | 63.372 | 5.825 |
| Kerala | 1075.47 | 568.18 | 90 | 2088 | 77.572 | 3.772 |
| Madhya Pradesh | 365.44 | 276.74 | 4 | 1102 | 49.089 | 6.056 |
| Maharashtra | 1515.11 | 501.15 | 521 | 2404 | 59.347 | 4.384 |
| Orissa | 270.03 | 164.93 | 17 | 625 | 44.939 | 7.489 |
| Punjab | 227.44 | 195.73 | 4 | 1209 | 66.139 | 4.077 |
| Rajasthan | 327.86 | 341.63 | 4 | 1263 | 52.992 | 6.219 |
| Tamil Nadu | 969.58 | 641.58 | 89 | 2269 | 69.700 | 4.160 |
| Uttar Pradesh | 781.78 | 329.45 | 166 | 1893 | 52.075 | 6.034 |
| West Bengal | 1620.08 | 573.54 | 232 | 2944 | 66.573 | 8.616 |
| All States | 643.213 | 348.026 | 112.688 | 1524.125 | 61.098 | 5.869 |

**R1, R2, and R3**

Table 6 reports the (time-averaged) expenditures on each of these types of safety net, as a percentage of state GDP. The figures for public food distribution, an in-kind transfer of grains, is given in thousands of tons. Again, the first point to note is that there are large variations across states in each of these series, although, on the whole, if we ignore Jammu and Kashmir, the variation drops considerably and is less than that we observed across countries.

Table 7a reports the rankings R1 to R3 for each type of safety net with the exception of public food distribution (PFD), which we consider separately because it is the only in-kind transfer we have. In table 7a, we take our dependent variable to be safety net expenditures as a share of state production. We will focus on the food subsidy and calamity expenditures here, as these are really targeted at the most vulnerable subpopulation of the poor, the chronically poor.

When we run regression (3) and use this to form R2, we find that the movements across R1 to R2 are far more stark for food subsidy than for calamity expenditures. For instance, although unconditionally it appears as if Assam performs well in the level of food subsidies it provides, once we take account of its ability to pay and the level of needs in that state, it performs poorly relative to the benchmark comparison of what Indian states are able to do on average. The same applies to Gujarat and Orissa. When we control for institutional quality and construct R3, states such as Tamil Nadu and Kerala slip down in rank, suggesting that they are now spending less than we would have predicted, while other states such as Rajasthan improve their rankings.

The movements for calamities are much less pronounced moving across the rankings—the correlation coefficient between R1 and R2 is 0.9393, and between R2 and R3 it is 0.9107.

This is as we may well expect, given that calamity expenditures are only responsive to natural disasters, which are randomly distributed across states, and so accounting for structural and institutional features should have less effect on relative performance.

A similar pattern emerges when we consider other Indian state-level types of safety net expenditures. Noticeably, there are large movements across all three rankings for social security expenditures and development expenditures.

Tables 7b and 7c repeat the analysis except now we use safety net expenditures as shares of total state government expenditures and state tax revenues, respectively. On the whole, these lead to higher correlation coefficients across the rankings than using state GDP, although the pattern of movements across rankings is robust to using any of these three normalizations.

The result for public food distribution (PFD) is in table 7d. Here there is remarkably little movement between ranks one and two, implying that again there is little that structural factors have to do with the levels of provision of these in-kind transfers. When we run (4) to control for institutional features, we do find some large falls in rank (Tamil Nadu, Andrha Pradesh) and some large rises (Bihar, Orissa). We may use this result to argue that, because this latter group of states appears to be underperforming relative to the state norm, they should increase their levels of PFD. Furthermore, the reasons that these states appear to underperform have more to do with their poorer-quality institutions than a less favorable economic situation.

## Table 7a: Indian State Social Safety Net Expenditures (SS/State production)

| | *Food Subsidy* | | | | *Calamity* | | | | *Health* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Jammu & Kashmir | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 |
| Tamil Nadu | 2 | 3 | 8 | Orissa | 2 | 3 | 6 | Kerala | 2 | 6 | 8 |
| Kerala | 3 | 6 | 6 | Rajasthan | 3 | 4 | 5 | Assam | 3 | 2 | 2 |
| Assam | 4 | 10 | 10 | Assam | 4 | 2 | 2 | Orissa | 4 | 10 | 7 |
| Karnataka | 5 | 9 | 11 | Gujarat | 5 | 7 | 8 | Rajasthan | 5 | 4 | 6 |
| Gujarat | 6 | 14 | 12 | Punjab | 6 | 5 | 3 | Punjab | 6 | 3 | 10 |
| Orissa | 7 | 13 | 9 | West Bengal | 7 | 6 | 7 | Karnataka | 7 | 9 | 11 |
| Rajasthan | 8 | 5 | 5 | Andhra Pradesh | 8 | 8 | 9 | Gujarat | 8 | 13 | 12 |
| Madhya Pradesh | 9 | 8 | 3 | Karnataka | 9 | 10 | 11 | Madhya Pradesh | 9 | 11 | 5 |
| West Bengal | 10 | 4 | 4 | Madhya Pradesh | 10 | 12 | 10 | Tamil Nadu | 10 | 8 | 9 |
| Maharashtra | 11 | 2 | 2 | Maharashtra | 11 | 9 | 4 | Andhra Pradesh | 11 | 12 | 15 |
| Andhra Pradesh | 12 | 11 | 13 | Kerala | 12 | 14 | 13 | West Bengal | 12 | 7 | 4 |
| Punjab | 13 | 12 | 14 | Bihar | 13 | 13 | 14 | Maharashtra | 13 | 5 | 3 |
| Bihar | 14 | 7 | 7 | Tamil Nadu | 14 | 11 | 12 | Bihar | 14 | 14 | 13 |
| Uttar Pradesh | 15 | 15 | 15 | Uttar Pradesh | 15 | 15 | 15 | Uttar Pradesh | 15 | 15 | 14 |
| | | | | | | | | | | | |
| Correlation matrix | | | | Correlation matrix | | | | Correlation matrix | | | |
| | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 | | rank1 | rank2 | rank3 |
| rank1 | 1 | | | rank1 | 1 | | | rank1 | 1 | | |
| rank2 | 0.3929 | 1 | | rank2 | 0.9393 | 1 | | rank2 | 0.6607 | 1 | |
| rank3 | 0.3393 | 0.8536 | 1 | rank3 | 0.8179 | 0.9107 | 1 | rank3 | 0.4750 | 0.7643 | 1 |
| Rank test(p-value) | | | | Rank test(p-value) | | | | Rank test(p-value) | | | |
| rank1=rank2 | 1 | | | rank1=rank2 | 1 | | | rank1=rank2 | 1 | | |
| rank2=rank3 | 1 | | | rank2=rank3 | 0.3877 | | | rank2=rank3 | 1 | | |

| | *Education* | | | | *Social* | | | | *Development* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Jammu & Kashmir | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 |
| Kerala | 2 | 3 | 7 | Kerala | 2 | 3 | 6 | Assam | 2 | 2 | 2 |
| Assam | 3 | 2 | 2 | Orissa | 3 | 6 | 4 | Orissa | 3 | 10 | 5 |
| Orissa | 4 | 12 | 9 | Rajasthan | 4 | 4 | 9 | Kerala | 4 | 4 | 7 |
| Rajasthan | 5 | 5 | 12 | Karnataka | 5 | 7 | 10 | Rajasthan | 5 | 6 | 8 |
| Punjab | 6 | 4 | 10 | Punjab | 6 | 2 | 11 | Karnataka | 6 | 9 | 11 |
| Karnataka | 7 | 9 | 14 | Gujarat | 7 | 11 | 5 | Punjab | 7 | 3 | 12 |
| Gujarat | 8 | 13 | 5 | Tamil Nadu | 8 | 8 | 7 | Gujarat | 8 | 13 | 10 |
| Tamil Nadu | 9 | 8 | 8 | Andhra Pradesh | 9 | 9 | 13 | Tamil Nadu | 9 | 8 | 9 |
| Madhya Pradesh | 10 | 11 | 15 | Madhya Pradesh | 10 | 12 | 8 | Madhya Pradesh | 10 | 12 | 6 |
| Andhra Pradesh | 11 | 10 | 13 | West Bengal | 11 | 5 | 3 | Andhra Pradesh | 11 | 11 | 15 |
| West Bengal | 12 | 7 | 6 | Bihar | 12 | 13 | 14 | West Bengal | 12 | 7 | 4 |
| Maharashtra | 13 | 6 | 3 | Maharashtra | 13 | 10 | 2 | Maharashtra | 13 | 5 | 3 |
| Bihar | 14 | 14 | 4 | Uttar Pradesh | 14 | 14 | 12 | Bihar | 14 | 14 | 13 |
| Uttar Pradesh | 15 | 15 | 11 | | | | | Uttar Pradesh | 15 | 15 | 14 |
| | | | | | | | | | | | |
| Correlation matrix | | | | Correlation matrix | | | | Correlation matrix | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | 0.6857 | 1 | | Rank2 | 0.7890 | 1 | | Rank2 | 0.6536 | 1 | |
| Rank3 | 0.1857 | 0.375 | 1 | Rank3 | 0.3187 | 0.4066 | 1 | Rank3 | 0.5107 | 0.6429 | 1 |
| Rank test(p-value) | | | | Rank test(p-value) | | | | Rank test(p-value) | | | |
| rank1=rank2 | 1 | | | rank1=rank2 | 0.5078 | | | rank1=rank2 | 1 | | |
| rank2=rank3 | 1 | | | rank2=rank3 | 1 | | | rank2=rank3 | 1 | | |

## Table 7b: Indian State Social Safety Net Expenditures (SS/Total state expenditures)

| | *Food Subsidy* | | | | *Calamity* | | | | *Health* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Jammu & Kashmir | 1 | 1 | 1 | Rajasthan | 1 | 1 | 1 | Rajasthan | 1 | 3 | 2 |
| Tamil Nadu | 2 | 2 | 2 | Gujarat | 2 | 3 | 3 | West Bengal | 2 | 1 | 1 |
| Gujarat | 3 | 7 | 7 | Orissa | 3 | 4 | 6 | Kerala | 3 | 4 | 10 |
| Karnataka | 4 | 5 | 6 | West Bengal | 4 | 5 | 5 | Madhya Pradesh | 4 | 7 | 3 |
| Kerala | 5 | 6 | 8 | Andhra Pradesh | 5 | 6 | 4 | Tamil Nadu | 5 | 5 | 5 |
| Orissa | 6 | 13 | 10 | Bihar | 6 | 10 | 14 | Andhra Pradesh | 6 | 9 | 11 |
| Rajasthan | 7 | 4 | 4 | Assam | 7 | 7 | 7 | Orissa | 7 | 11 | 9 |
| Madhya Pradesh | 8 | 8 | 5 | Punjab | 8 | 2 | 2 | Maharashtra | 8 | 10 | 8 |
| Maharashtra | 9 | 3 | 3 | Maharashtra | 9 | 12 | 8 | Jammu & Kashmir | 9 | 8 | 6 |
| Assam | 10 | 11 | 14 | Madhya Pradesh | 10 | 11 | 9 | Gujarat | 10 | 12 | 12 |
| West Bengal | 11 | 9 | 11 | Uttar Pradesh | 11 | 9 | 10 | Punjab | 11 | 2 | 4 |
| Andhra Pradesh | 12 | 12 | 12 | Karnataka | 12 | 13 | 13 | Karnataka | 12 | 13 | 14 |
| Bihar | 13 | 10 | 9 | Tamil Nadu | 13 | 15 | 12 | Uttar Pradesh | 13 | 14 | 13 |
| Punjab | 14 | 15 | 15 | Jammu & Kashmir | 14 | 8 | 15 | Assam | 14 | 6 | 7 |
| Uttar Pradesh | 15 | 14 | 13 | Kerala | 15 | 14 | 11 | Bihar | 15 | 15 | 15 |
| | | | | | | | | | | | |
| Correlation Matrix | | | | Correlation Matrix | | | | Correlation Matrix | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | 0.7714 | 1 | | Rank2 | 0.8000 | 1 | | Rank2 | 0.6500 | 1 | |
| Rank3 | 0.7571 | 0.9321 | 1 | Rank3 | 0.7607 | 0.8000 | 1 | Rank3 | 0.6500 | 0.8643 | 1 |
| Rank Test(P-Value) | | | | Rank Test(P-Value) | | | | Rank Test(P-Value) | | | |
| Rank1=Rank2 | 1 | | | Rank1=Rank2 | 0.2668 | | | Rank1=Rank2 | 0.2668 | | |
| Rank2=Rank3 | 1 | | | Rank2=Rank3 | 1 | | | Rank2=Rank3 | 1 | | |

| | *Education* | | | | *Social* | | | | *Development* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Kerala | 1 | 1 | 2 | Kerala | 1 | 1 | 5 | Kerala | 1 | 3 | 9 |
| Assam | 2 | 3 | 1 | West Bengal | 2 | 2 | 2 | Andhra Pradesh | 2 | 5 | 1 |
| Bihar | 3 | 7 | 3 | Andhra Pradesh | 3 | 4 | 6 | Tamil Nadu | 3 | 2 | 2 |
| Tamil Nadu | 4 | 5 | 8 | Tamil Nadu | 4 | 3 | 7 | Madhya Pradesh | 4 | 4 | 7 |
| West Bengal | 5 | 4 | 7 | Gujarat | 5 | 5 | 8 | Gujarat | 5 | 7 | 6 |
| Punjab | 6 | 2 | 9 | Orissa | 6 | 7 | 9 | Assam | 6 | 1 | 3 |
| Rajasthan | 7 | 6 | 4 | Bihar | 7 | 8 | 4 | Karnataka | 7 | 8 | 10 |
| Madhya Pradesh | 8 | 8 | 5 | Rajasthan | 8 | 9 | 3 | Jammu & Kashmir | 8 | 10 | 11 |
| Karnataka | 9 | 9 | 10 | Madhya Pradesh | 9 | 10 | 1 | Orissa | 9 | 6 | 4 |
| Gujarat | 10 | 11 | 12 | Punjab | 10 | 6 | 10 | Rajasthan | 10 | 12 | 13 |
| Andhra Pradesh | 11 | 10 | 11 | Karnataka | 11 | 11 | 11 | Punjab | 11 | 15 | 12 |
| Uttar Pradesh | 12 | 12 | 6 | Maharashtra | 12 | 12 | 13 | West Bengal | 12 | 11 | 8 |
| Maharashtra | 13 | 13 | 14 | Uttar Pradesh | 13 | 13 | 12 | Bihar | 13 | 9 | 5 |
| Orissa | 14 | 14 | 13 | Jammu & Kashmir | 14 | 14 | 14 | Uttar Pradesh | 14 | 13 | 14 |
| Jammu & Kashmir | 15 | 15 | 15 | Maharashtra | 15 | 14 | 15 | | | | |
| | | | | | | | | | | | |
| Correlation Matrix | | | | Correlation Matrix | | | | Correlation Matrix | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | Rank1 | 1 | | | | | Rank1 | 1 | | |
| Rank2 | 0.9321 | 1 | | Rank2 | 0.9516 | 1 | | Rank2 | 0.8286 | 1 | |
| Rank3 | 0.8357 | 0.7464 | 1 | Rank3 | 0.6659 | 0.5604 | 1 | Rank3 | 0.6107 | 0.8000 | 1 |
| Rank Test(P-Value) | | | | Rank Test(P-Value) | | | | Rank Test(P-Value) | | | |
| Rank1=Rank2 | 1 | | | Rank1=Rank2 | 0.4531 | | | Rank1=Rank2 | 1 | | |
| Rank2=Rank3 | 0.7905 | | | Rank2=Rank3 | 0.5488 | | | Rank2=Rank3 | 0.3953 | | |

## Table 7c: Indian State Social Safety Net Expenditures (SS/Total state tax revenues)

| | *Food Subsidy* | | | | *Calamity* | | | | *Health* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Jammu & Kashmir | 1 | 1 | 1 | Rajasthan | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 |
| Tamil Nadu | 2 | 2 | 3 | Orissa | 2 | 2 | 4 | Rajasthan | 2 | 2 | 3 |
| Gujarat | 3 | 11 | 10 | Gujarat | 3 | 7 | 5 | Orissa | 3 | 4 | 5 |
| Karnataka | 4 | 7 | 9 | Assam | 4 | 3 | 3 | Assam | 4 | 3 | 2 |
| Kerala | 5 | 5 | 6 | West Bengal | 5 | 6 | 7 | Kerala | 5 | 7 | 8 |
| Orissa | 6 | 13 | 11 | Andhra Pradesh | 6 | 8 | 6 | Madhya Pradesh | 6 | 8 | 6 |
| Rajasthan | 7 | 4 | 5 | Bihar | 7 | 11 | 15 | West Bengal | 7 | 5 | 4 |
| Assam | 8 | 10 | 12 | Punjab | 8 | 5 | 2 | Tamil Nadu | 8 | 9 | 9 |
| Madhya Pradesh | 9 | 8 | 4 | Jammu & Kashmir | 9 | 4 | 9 | Andhra Pradesh | 9 | 10 | 13 |
| Maharashtra | 10 | 3 | 2 | Madhya Pradesh | 10 | 10 | 11 | Karnataka | 10 | 12 | 12 |
| West Bengal | 11 | 6 | 7 | Maharashtra | 11 | 13 | 8 | Uttar Pradesh | 11 | 13 | 11 |
| Bihar | 12 | 9 | 8 | Karnataka | 12 | 12 | 14 | Maharashtra | 12 | 11 | 7 |
| Andhra Pradesh | 13 | 12 | 13 | Uttar Pradesh | 13 | 9 | 13 | Gujarat | 13 | 14 | 14 |
| Punjab | 14 | 14 | 15 | Tamil Nadu | 14 | 14 | 12 | Punjab | 14 | 6 | 10 |
| Uttar Pradesh | 15 | 15 | 14 | Kerala | 15 | 15 | 10 | Bihar | 15 | 15 | 15 |
| | | | | | | | | | | | |
| Correlation Matrix | | | | Correlation Matrix | | | | Correlation Matrix | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | 0.6071 | 1 | | Rank2 | 0.8357 | 1 | | Rank2 | 0.8393 | 1 | |
| Rank3 | 0.5643 | 0.9321 | 1 | Rank3 | 0.7214 | 0.7536 | 1 | Rank3 | 0.8393 | 0.9036 | 1 |
| Rank Test(P-Value) | | | | Rank Test(P-Value) | | | | Rank Test (P-Value) | | | |
| Rank1=Rank2 | 0.7539 | | | Rank1=Rank2 | 1 | | | Rank1=Rank2 | 0.3877 | | |
| Rank2=Rank3 | 0.7905 | | | Rank2=Rank3 | 1 | | | Rank2=Rank3 | 1 | | |

| | *Education* | | | | *Social* | | | | *Development* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* | *State* | *Rank1* | *Rank2* | *Rank3* |
| Jammu & Kashmir | 1 | 1 | 2 | Jammu & Kashmir | 1 | 1 | 1 | Jammu & Kashmir | 1 | 1 | 1 |
| Kerala | 2 | 3 | 3 | Orissa | 2 | 2 | 2 | Assam | 2 | 2 | 2 |
| Assam | 3 | 2 | 1 | Rajasthan | 3 | 4 | 4 | Orissa | 3 | 3 | 3 |
| Rajasthan | 4 | 4 | 6 | Kerala | 4 | 3 | 3 | Rajasthan | 4 | 4 | 6 |
| Orissa | 5 | 6 | 7 | West Bengal | 5 | 5 | 5 | Kerala | 5 | 5 | 4 |
| Madhya Pradesh | 6 | 8 | 13 | Madhya Pradesh | 6 | 6 | 6 | Madhya Pradesh | 6 | 6 | 13 |
| Karnataka | 7 | 10 | 15 | Andhra Pradesh | 7 | 7 | 7 | Andhra Pradesh | 7 | 7 | 12 |
| Bihar | 8 | 13 | 4 | Bihar | 8 | 13 | 13 | Karnataka | 8 | 8 | 11 |
| Tamil Nadu | 9 | 9 | 9 | Gujarat | 9 | 9 | 11 | Tamil Nadu | 9 | 9 | 8 |
| West Bengal | 10 | 7 | 8 | Tamil Nadu | 10 | 10 | 10 | Gujarat | 10 | 13 | 10 |
| Punjab | 11 | 5 | 14 | Punjab | 11 | 8 | 14 | Punjab | 11 | 10 | 14 |
| Andhra Pradesh | 12 | 11 | 11 | Uttar Pradesh | 12 | 11 | 8 | Bihar | 12 | 14 | 15 |
| Gujarat | 13 | 14 | 12 | Karnataka | 13 | 12 | 12 | Uttar Pradesh | 13 | 12 | 9 |
| Uttar Pradesh | 14 | 12 | 5 | Maharashtra | 14 | 14 | 9 | West Bengal | 14 | 11 | 7 |
| Maharashtra | 15 | 15 | 10 | Maharashtra | 15 | 15 | 5 | | | | |
| | | | | | | | | | | | |
| Correlation Matrix | | | | Correlation Matrix | | | | Correlation Matrix | | | |
| | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 | | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | | Rank1 | 1 | | | Rank1 | 1 | | |
| Rank2 | 0.8357 | 1 | | Rank2 | 0.9165 | 1 | | Rank2 | 0.9571 | 1 | |
| Rank3 | 0.5286 | 0.4679 | 1 | Rank3 | 0.8198 | 0.8374 | 1 | Rank3 | 0.5143 | 0.5714 | 1 |
| Rank Test(P-Value) | | | | Rank Test(P-Value) | | | | Rank Test (P-Value) | | | |
| Rank1=Rank2 | 1 | | | Rank1=Rank2 | 0.6875 | | | Rank1=Rank2 | 1 | | |
| Rank2=Rank3 | 0.7744 | | | Rank2=Rank3 | 1 | | | Rank2=Rank3 | 1 | | |

**Table 7d: Indian State Social Safety Net Expenditures: Public Food Distribution**

| *State* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|
| Kerala | 1 | 1 | 5 |
| Jammu & Kashmir | 2 | 2 | 1 |
| West Bengal | 3 | 3 | 2 |
| Maharashtra | 4 | 4 | 3 |
| Assam | 5 | 5 | 4 |
| Tamil Nadu | 6 | 6 | 11 |
| Gujarat | 7 | 7 | 6 |
| Punjab | 8 | 9 | 15 |
| Karnataka | 9 | 8 | 12 |
| Andhra Pradesh | 10 | 10 | 14 |
| Bihar | 11 | 13 | 7 |
| Orissa | 12 | 11 | 8 |
| Rajasthan | 13 | 12 | 10 |
| Uttar Pradesh | 14 | 14 | 9 |
| Madhya Pradesh | 15 | 15 | 13 |
| | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | |
| Rank2 | 0.9857 | 1 | |
| Rank3 | 0.6607 | 0.6571 | 1 |
| Rank test(p-value) | | | |
| Rank1=Rank2 | 1 | | |
| Rank2=Rank3 | 0.3018 | | |

The estimates for the regressions (3) and (4), which lie behind tables 7a through 7d are omitted for brevity. There are generally negative income effects for all types of safety net. Higher rural headcount measures decrease spending while urban headcount increases spending, which may be suggestive of an urban bias in government responses to poverty alleviation. Both rural and urban income ginis tend to decrease expenditures, implying that, as income inequality widens, spending as a share of state GDP rises. Consistent with the results from table 7a, none of these structural factors except urban headcounts are significant determinants of calamity spending.

The levels of voter turnout increase health, education, social, and development expenditures in the regression. Political competition, surprisingly, reduces expenditures. However, across all expenditure types, we consistently find that increased literacy rates, both among males and females, significantly increase the levels of safety net expenditures. Finally, as shocks become more variable, they tend to decrease education and social spending, but the average level of shocks plays no role.

Finally, the regression findings for public food distribution (PFD) suggest that richer states distribute more, and that urban headcounts and income inequality have greater effects than the same rural factors. Voter turnout has a very strong positive impact on PFD, as well as both shock variables. Political competition has no effect and, in line with the earlier results, male and female literacy rates significantly increase food distribution.

**Welfare Outcome Results**

The final part of our analysis concerns the construction of rankings R1 to R3 for the welfare outcome of infant mortality rates across Indian states. These are reported in table 8. States such as Jammu and Kashmir and Punjab which appear to have low IMR actually do much worse given their structural features relative to other Indian states, implying they ought to spend more, while Gujarat and Bihar all manage to outperform the Indian benchmark level, controlling for structural economic factors. Controlling for institutional quality as we move to R3, there is still a high degree of movement—West Bengal and Mahrashtra would appear to have poor-quality institutions, while Bihar and Rajasthan move up the rankings once institutional quality is controlled for.

**Table 8: Indian State-Level Outcome Measures**

**Infant Mortality Rate (per 1000 live births, urban and rural combined)**

| *State* | *Rank1* | *Rank2* | *Rank3* |
|---|---|---|---|
| Kerala | 1 | 1 | 3 |
| Jammu & Kashmir | 2 | 14 | 13 |
| Maharashtra | 3 | 2 | 6 |
| West Bengal | 4 | 7 | 14 |
| Karnataka | 5 | 3 | 4 |
| Punjab | 6 | 13 | 12 |
| Tamil Nadu | 7 | 5 | 9 |
| Andhra Pradesh | 8 | 6 | 5 |
| Bihar | 9 | 4 | 1 |
| Gujarat | 10 | 8 | 8 |
| Rajasthan | 11 | 9 | 2 |
| Madhya Pradesh | 12 | 10 | 7 |
| Orissa | 13 | 11 | 11 |
| Uttar Pradesh | 14 | 12 | 10 |
| | | | |
| | Rank1 | Rank2 | Rank3 |
| Rank1 | 1 | | |
| Rank2 | 0.4286 | 1 | |
| Rank3 | -0.0505 | 0.6484 | 1 |
| Rank test(p-value) | | | |
| Rank1=Rank2 | 0.0923 | | |
| Rank2=Rank3 | 0.7744 | | |

The regression from which these rankings are derived (not shown), seem to suggest that income levels will decrease infant mortality rates, and urban and rural poverty both increase IMR. In terms of the institutional controls, political competition, voter turnout, and literacy rates all significantly reduce infant mortality rates.

## VII. Toward a Constructive Policy Dialogue

### *The Case for Safety Nets*

There is much debate regarding how much government ought to spend on safety nets both in developing and developed countries. However, there are no easy answers to this question. What we have attempted to do in this paper is to create a framework in which a more constructive policy debate can take place. We lay out this structure below.

The first issue to settle concerns what safety nets are, who they are for, and what are the benefits of providing them. We summarize our earlier discussion in a simple matrix form in table 9.

**Table 9: A Policy Dialogue**

| | | |
|---|---|---|
| Definition of Safety Nets | (i) redistributive role transferring resources toward the poorer members of society to bring them out of poverty | |
| | (ii) provide greater opportunities for individuals to mitigate risks from unforeseen contingencies | |
| Who Are They For? | (i) chronically poor | |
| | (ii) temporarily poor | |
| | (iii) movers into poverty during periods of adjustment or crisis | |
| The Benefits of Safety Nets | Equity | - societal aversion to inequality |
| | | - redistribution need not be at the expense of growth |
| | Efficiency | - correction of market failures |
| | | - insurance mechanisms for the poor in place of short-term coping strategies |
| | | - reduced uncertainty may increase human and physical capital investments by the poor |
| | | - less incentive to engage in marginalized economic activities |
| | Political Economy | - reduces probability of political failure |
| | | - raises participation of the poor in policymaking process |
| | | - demonstrates government's commitment to tackling poverty |
| | Social Cohesion | - raises the political acceptability of market-based reforms that often need to be made in the aftermath of economic crisis |
| | | - societal aversion to inequality of opportunity |

We hope that the approach to safety nets taken here helps us to move away from a program-based definition of safety nets and toward a more objective-based or functional definition of what safety nets are.

Table 9 also helps us to provide government officials with a clear way of thinking through what benefits may be conferred to the economy through the expansion of safety nets, in terms of both equity and efficiency objectives. This set of arguments, many of which are recent in the literature, provide a case for safety nets that is independent of how we think of how much governments ought to spend, and whether or not we use the benchmarking exercise advocated here. Presenting the arguments in favor of safety net expenditures in this way allows policymakers to stop thinking of such programs purely in terms of the costs of provision.

***Benchmarking***

The approach here addresses the question of how much governments ought to spend by establishing what governments are able to do on average and then using this as a point of comparison for what any given government is actually doing. This is the notion of benchmarking, whereby a summary statistic is created by which one country's performance can be compared to that of its neighbors in a straightforward manner.

Comparison across the different rankings provides a powerful and easily presented tool for officials to help determine how their country is performing relative to other countries, and perhaps more pertinently, relative to their closest economic neighbors. In discussing the results, we have emphasized many cases where neighboring countries had radically different rankings. This result in itself might sometimes motivate safety net expenditures.

We have applied this idea of benchmarking both to safety net expenditures and to welfare outcomes. We have done this in terms of cross-country comparisons, but we have also shown how the methodology can be equally well applied at the sub-national level by analyzing Indian states.

We have made the following arguments as to why benchmarking can be an effective tool for policymakers. First, benchmarking allows governments to compare their own performance to that of their neighbors. Benchmarking through the use of rankings very clearly conveys information on the underlying effort being made by governments on these policy outcomes. The data requirements to construct these rankings are minimal compared to alternative methodologies.

The methodology we have described may enhance the policy debate by presenting expenditure rankings in terms of the underlying structural features of country economies and the design of institutions. This is important if governments believe that the structural factors are only influenced by policy in the long run, while the institutional factors can be subject to short- and medium-run constitutional reform. It is probably often going to be advisable to think of the two types of reform as complementary, rather than viewing any single potential policy reform as always of a higher priority than another. We hope to have demonstrated that the exact policy prescription will depend on both country-specific factors and the type of safety net we are talking about.

### *Constructing the Rankings*

We have benchmarked countries by constructing three ranks—first, a ranking based on unconditional expenditures on safety nets; second, a ranking conditioning on structural features of the economy; and third, a ranking also conditioning on the quality of institutions within the country.

We have argued that the presentation of our analysis in the form of rankings is useful for several reasons. First, it is a simple summary statistic on which to base arguments to policymakers for changes in spending. Second, the use of rankings makes our results more robust to econometric concerns arising from the potential endogeneity of some covariates, as well as omitted variables due to lack of data. The data requirements for this approach are also minimal. For instance, we do not need to define any welfare criterion by which to judge optimal levels of spending. Third, international or regional norms provide a natural point of comparison for how much effort governments are seen to be putting into safety net spending. They can also be used to motivate policy discussions.

Formally, our three ranking systems have been the following:

**R1** Time-averaged unconditional ranking of safety net spending. A lower ranking means that the country unconditionally spends less on safety nets.

**R2** Ranking of social spending conditional on structural factors. A lower ranking means that safety net expenditures are lower than we would expect compared to the countries in the same region, controlling for structural features of the economy.

**R3** Ranking also taking into account quality of government. Again, a lower ranking means that safety net expenditures are lower than we would expect compared to the countries in the same region, controlling both for structural and institutional features of the economy.

Movements across these rankings as well as the ranks themselves provide information on the recommended policy prescriptions. The comparison between R1 and R2 is instructive as it demonstrates that the level of safety net spending, what we have previously referred to as the demand function for safety nets, is dependent partly on structural features of the economy such as the distribution of income as well as its per capita level, or the level of urbanization, which are probably factors that can only be changed through government policy in the very long run.

Comparing rankings R2 and R3 indicates how controlling for institutional factors, which are subject to influence through policy, can change a country's relative performance. The comparison of rankings R2 and R3 thus points to institutional reform as a means of improving a country's/state's performance relative to the benchmark.

### *An Example of Benchmarking*

An illustrative example can be given here of the type of dialogue that may follow from this analysis. Consider the relative performance of South Asian countries with regard to life expectancy. Looking at the unconditional rankings (R1) in table 4a, Sri Lanka is ranked 39th in the world, India is 73rd, Pakistan is 75th, and Bangladesh is 83rd, out of a total of 103

countries. At face value, this suggests that Sri Lanka appears to put much more effort into improving welfare as measured by life expectancy than do the other South Asian countries. India, Pakistan, and Bangladesh have much more similar performance, unconditional on any other factors.

Moving to R2, where we control for structural features of the economy, we find that the relative performance of South Asian countries changes, and to dramatically different extents. Pakistan rises to 33rd in the world, India falls to 76th and is overtaken by Bangladesh, which rises to 45th. This suggests that, given India's ability to finance such welfare improvements, and the need for them, it performs poorly compared to its neighbors. In this respect, Sri Lanka's performance is impressive—controlling for structural factors, Sri Lanka moves to first place, suggesting its government puts the most effort into welfare improvement as measured in this dimension.

Moving to rank three, where we also control for institutional factors, we see that Sri Lanka remains first, and Pakistan and Bangladesh continue to improve their international rankings, while India's performance remains around the same level at 76.

We would argue that the presentation of such information makes it clear that unconditional rankings can give a misleading perception to the relative performance of countries. In addition, the method is able to say where the strengths and weaknesses of each country's policies appear to be—whether structural or institutional.

The value of benchmarking is that it relates the social spending levels of a country to other countries at similar levels of income (R2) or institutional development (R3). Making this ranking public information and open for debate may tend to strengthen the incentives for low-performing governments to spend more effectively on safety nets and other social expenditures.

## Data Appendix

### *Cross-Country Data*

All of the data are from the *IMF Government Finance Statistics Yearbook*, and each series is available over the period 1972–97. The safety net variable definitions are:

**Transfers to Organizations and Households**
Current transfer payments to private social institutions such as hospitals and schools, learned societies, associations, and sports clubs that are not operated as enterprises; current payments in cash (not in kind) to households, adding to their disposable income without any simultaneous, equivalent counterpart provided in exchange by the beneficiary, and neither generating nor extinguishing a financial claim; usually intended to cover charges incurred by households because of the appearance, or existence, of certain risks and needs.

**Social Security and Welfare**
Transfer payments (including in kind) to compensate for reduction or loss in income or inadequate earning capacity; sickness, maternity, and temporary disablement benefits; government employee pension schemes; old age, disability, or survivors' benefits; unemployment compensation benefits; family and child allowances; other social assistance to persons and to residential institutions for children or the elderly.

**Education**
Pre-primary, primary, secondary (vocational and technical), tertiary, university, and subsidiary services to education.

**Health**
General and specialized hospital services; nursing and convalescent home services; clinics; medical, dental, and paramedical practitioners; public health affairs and services; medication; prostheses; medical equipment; applied research; and experimental development.

The data source for the quality-of-government measures is the *International Country Risk Guide* (ICRG), a monthly publication of Political Risk Services. This data set has been compiled by Knack and Keefer (1995), where the following definitions are given:

**Repudiation of Government Contracts**
Indicates the "risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down," due to "budget cutbacks, indigenization pressure, a change in government, or a change in government economic and social priorities." Scored 0–10, with higher scores for higher risks.

**Expropriation Threat**
Assessment of risk of "outright confiscation" or "forced nationalization." Scored 0–10, with higher scores for higher risks.

**Corruption in Government**
Higher scores indicate "high government officials are likely to demand special payments" and "illegal payments are generally accepted throughout lower levels of government" and in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Scored 0–6.

**Rule of Law**
This variable "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." Lower scores indicate "sound political institutions, a strong court system, and provisions for an orderly succession of power." Higher scores indicate "a tradition of depending on physical force or illegal means to settle claims." Upon changes in government in countries scoring low on this measure, new leaders "may be less likely to accept the obligations of the previous regime." Scored 0–6.

**Government Bureaucracy**
Low scores indicate "autonomy from political pressure" and "strength and expertise to govern without drastic changes in policy or interruptions in government services"; also existence of an "established mechanism for recruiting and training". Scored 0–6.

***Indian State-Level Analysis***

**Public Finance Variables**
Development expenditure includes expenditure on economic and social services. Economic services include agriculture and allied activities, rural development, special area programs, irrigation and flood control, energy, industry and minerals, transport and communications, science, technology, and environment. Social services include education, medical and public health, family welfare, water supply and sanitation, housing, urban development, labor and labor welfare, social security and welfare, nutrition, and relief on account of natural calamities. Health, education, food subsidies, and calamity relief expenditures are just a component of social expenditures. The primary source for state-level information on taxes and expenditures is an annual publication, *Public Finance Statistics* (Ministry of Finance, Government of India). This information is also collated in the Reserve Bank of India's annual publication *Report on Currency and Finance*.

**Public Food Distribution**
Issues/public distribution of food grains (both from central and state governments) divided by (interpolated) state population measured in tons per person. The source is the *Bulletin on Food Statistics*, Ministry of Food and Agriculture, Directorate of Economics and Statistics.

**State Income Per Capita**
The primary source for data on state income is an annual government publication *Estimates of State Domestic Product* (Department of Statistics, Ministry of Planning). The primary sources for the Consumer Price Index for Agricultural Laborers (CPIAL) and Consumer Price Index for Industrial Workers (CPIIW), which are used to deflate the agricultural and non-agricultural components of state domestic product, respectively, are a number of Government of India publications including the *Indian Labor Handbook*, the *Indian Labor Journal*, the *Indian Labor Gazette* and the Reserve Bank of India's *Report on Currency and Finance*. Ozler, Datt, and Ravallion (1996) have further corrected CPIAL and CPIIW to take account of interstate cost-of-living differentials and have also adjusted CPIAL to take account of rising firewood prices. Using their data allows us to put together a consistent and complete series on real total, agricultural, and non-agricultural state income for the period 1960-92.

**Poverty and Inequality**
We use the headcount and gini measures for the rural and urban areas of India's 16 major states, spanning 1957–58 to 1991–92 put together by Ozler, Datt, and Ravallion (1996). These measures are based on 22 rounds of the National Sample Survey (NSS), which span this period.

**Voter Turnout**
The percentage of eligible voters in the state that actually voted in the last elections for the state legislature. This data is from Butler, Lahiri, and Roy (1991).

**Variance of Social Spending**
The variance of social spending that cannot be explained by the variance of state income and natural calamities.

**Deviation from State Mean of Level of Social Spending**
The deviation from state means of social spending, controlling for mean income levels and the occurrence of natural calamities.

### *Construction of the Shock Variables*

In the cross-country analysis, we constructed a "shock to GDP variable," which is essentially a residual from a standard growth regression. It thus proxies for how far a country is from its long-run sustainable growth level. The form of the growth regression is standard, being taken from the growth literature. We simply regress log GDP on initial GDP, population growth, and capital per worker. A similarly constructed variable is used in the Indian state-level analysis.

A second set of shock variables is constructed only for the Indian analysis. The variables are intended to capture the deviations of social expenditures from their long-run stable paths. The methodology is detailed in Wei (1997). The two variables are constructed by regressing each type of expenditure on state income growth and state natural disasters, and forming the mean and variance of the estimated residuals.

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