Arithmetics and Politics of Domestic Resource Mobilization

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Abstract

The 2015 United Nations resolution on Financing for Development stresses the importance of effective resource mobilization and use of domestic resources to pursue sustainable development. The first Sustainable Development Goal is to eradicate extreme poverty for all people everywhere by 2030. This paper proposes an accounting exercise to assess whether it is feasible for countries to eliminate poverty using only domestic resources, in other words, by mere redistribution. Moreover, the paper argues that the concentration of resources in the hands of fewer individuals in the society may hinder the feasibility of implementing effective fiscal policies (from the revenue side and the social spending side) to reduce poverty. The paper provides a new tool to assess the capacity of countries to eliminate poverty through redistribution, and a new tool to approximate the concentration of political influence in a country. The new methodologies are applied to the most recent surveys available for more than 120 developing countries. The findings show that countries with the same fiscal capacity to mobilize resources for poverty eradication differ widely in the political feasibility of such redistribution policies.

This paper is a joint product of the 2017 World Development Report Team, Development Economics; and the Poverty and Equity Global Practice Group. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at lceriani@worldbank.org.
Arithmetics and Politics of Domestic Resource Mobilization

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The World Bank

Keywords: domestic resource mobilization; poverty gap; fiscal capacity; taxation; political influence

JEL Codes: D63; I32; P16
1 Introduction

Throughout history, taxation has been the backbone of the structure of the state. It is the channel through which citizens provide those to whom authority is delegated with the resources to look after the public good. Around the time when ancient Greece became the ideal model of the modern state in the West, in South Asia, Kautilya wrote in the Arthasashtra—the ancient Indian treatise on the state and the economy—that:

When there was no order in society and only the law of the jungle prevailed, people [were unhappy and being desirous of order] made Manu, the son of Vivasvat, their king; and they assigned to the king one-sixth part of the grains grown by them, one-tenth of other commodities and money. The king then used these to safeguard the welfare of his subjects. Those who do not pay fines and taxes take on themselves the sins of kings, while kings who do not look after the welfare of the people take on themselves the sins of their subjects [...] (Kautilya, 4th Century BC, IV century BC, 1.13.5-10)

Indeed, throughout history and across space, taxation has been seen as the link between the government and the governed, a fundamental pillar of the social contract. Yet, the heterogeneity in terms of tax collection among countries is astounding (Besley and Persson, 2014; Gaspar, Jaramillo, and Wingender, 2016). The policy dialogue has stressed the importance of increasing tax collection in order to finance specific development goals, but also as a means to strengthen accountability of the government to its citizens. The UN resolution on Financing for Development stresses the importance of effective resource mobilization and use of domestic resources to pursue sustainable development (United Nations, 2015). With cost projections in the trillions, domestic resource mobilization (DRM) in developing countries will be a critical source of funding to achieve the Sustainable Development Goals (Development Committee, 2015).

In order to raise the financial resources needed to invest in public spending, governments must rely on taxation. While the desirable and feasible level of taxation may differ greatly across countries, depending on factors such as the country’s existing endowments or society’s normative beliefs about the appropriate levels of taxation, increasing evidence suggests that tax revenues of at least 15 percent of GDP may be necessary in order to execute basic state functions and to sustain development progress (Gaspar, Jaramillo, and Wingender, 2016). However, currently, more than half of the low-income countries are below this threshold (IMF, OECD, UN, and WBG, 2016).

What are the key constraints that countries face in increasing their mobilization of resources? Answers to this question typically focus on the domestic capacity to mobilize resources, with less emphasis on the fact that low fiscal revenues are themselves the result
of a political equilibrium, and that the incentives for policy makers may not be in favor of fiscal reform. It is thus important to disentangle elements related strictly to capacity in terms of existing resources and those related to potential political constraints. This paper proposes a simple exercise to distinguish how these factors influence the ability of countries to achieve the first Sustainable Development Goal of eradicating extreme poverty by 2030. In this paper we propose, first, an accounting exercise to assess whether it is feasible for countries to eliminate poverty using only domestic resources, implementing simple re-distribution rules (which this papers calls the arithmetics of DRM). We then argue that the concentration of resources in the hands of fewer individuals in the society may hinder the ability to effectively implement such redistribution rules —both from the revenue side and from the social spending side. We propose a new way to approximate the concentration of political influence in a country linked to the unequal control over resources—which may thwart the efforts to eliminate poverty solely through domestic resource mobilization (which this papers calls the politics of DRM). We apply the new methodologies to the most recent surveys available for over 120 developing countries.

The rest of the paper is organized as follows. Section 2 provides a brief review of the literature on merits of DRM as well as the constraints to increasing DRM in terms of both the taxable capacity and the political equilibrium. Section 3 proposes a framework for measuring the arithmetics and the politics of DRM. Section 4 describes the data utilized in the exercise. Section 5 presents the results of the analysis. Section 6 concludes.

2 Beyond capacity: Unpacking the constraints to increasing domestic resource mobilization

While domestic resource mobilization (DRM) has recently garnered attention in the international dialogue, its importance for both economic and state development has long been acknowledged. As Schumpeter asserted almost a century ago, “the fiscal history of a people is above all an essential part of its general history” (Schumpeter, 1918). In addition to serving as an essential source of funding for governments to invest in delivering public goods and services, DRM can also reduce dependency on aid donors, thereby enabling countries to pursue long term national priorities, and it can strengthen the responsiveness of institutions by enhancing the accountability of governments to their citizens (see, for instance, Bhushan and Samy, 2015).

The fiscal capacity of countries to pursue development objectives is often analyzed in terms of the dichotomy between domestic resource mobilization versus foreign development assistance. This dichotomy or complementarity—has been studied, mainly, from the perspective of the potential shift of accountability from citizens in recipient countries to
donors’ constituencies (Prichard, Brun, and Morrissey, 2012; Bräutigam, Fjeldstad, and Moore, 2008). According to this argument, reliance on external financing to fill revenue gaps can have negative consequences on the ability of countries to maintain ownership of their development trajectories. Indeed, the definition of policy priorities may be influenced by donors’ political preferences as opposed to domestic needs (distorting ex-ante accountability). Ultimately, a core function of institutions is to enable commitment to long term national objectives (World Bank, 2017). However, if a country is dependent on external funding cycles, it may be unable to pursue such objectives if commitments are truncated in the face of changing donor priorities.

Relying on foreign aid in place of DRM can also potentially reduce the answerability of politicians to society, as implementation becomes a donor-recipient negotiation rather than a state-citizen agreement (distorting ex-post accountability). When states rely on their domestic tax base for funding, political leaders have more incentives to be responsive to the needs of their consistencies and may be more likely to include them in policy discussions. Over time, by broadening the bargaining space and reliably delivering public goods and services, states can build trust with citizens and strengthen their legitimacy in society. The feedback effect of improving taxation is thus also fundamental for improving the effectiveness of state institutions (Levi, 1988).

Mobilizing domestic resources is thus critical for achieving social and political progress in addition to economic progress; however low-income countries systematically collect fewer taxes. Even though they have made significant progress in improving tax collection over the past two decades, low-income countries still only collect taxes of between 10 to 20 percent of GDP (compared to 40 percent of GDP in high-income countries, see Besley and Persson, 2014). This paper relates to two key strands of the literature identifying the constraints countries face in mobilizing more revenue which look at: the taxable capacity of the state (including the ability of the tax base to contribute as well as the administrative ability of the state to collect that revenue), and the political equilibrium that underlies the adoption and implementation of tax policies (including the ability of different powerful groups to influence policy decisions).

2.1 Taxable capacity

The structure of the economy –including the degree of informality, level of urbanization, geography, and openness to international trade– is a key factor which influences the ability of governments to collect taxes (Gupta, 2007). For example, in many low income countries the share of informality in the economy is especially high –with estimates suggesting that it accounts for 30-40 percent of GDP in the poorest countries (Besley and Persson, 2014). As the lack of formal records makes collecting taxes from these businesses challenging to
implement, the missing tax revenue due to informality can be quite high (La Porta and Shleifer, 2014). As Keen (2012) finds, compared to developing countries, tax evasion in developing countries due to informality is almost twice as high. Moreover, other structural factors outside the national economy, in particular global tax competition and other opportunities for capital flight, have weakened the ability of states to mobilize domestic resources.

These types of characteristics narrow the tax base and make it difficult for countries to depend on taxes such as personal income taxes. In fact, most low-income countries collect less than 10 percent of tax revenue from personal income taxes, compared to over 25 percent in OECD countries (Keen, 2012). This in turn increases dependence on other less stable sources of taxation such as foreign trade taxes or resource extraction taxes, which evidence suggests lead to lower levels of tax collection overall (Di John, 2006; Jensen, 2011). According to Jensen (2011), as the share of natural resource rents in total government revenues increases, the share of taxation in GDP decreases at an even faster rate. Similarly, in countries where the potential for capital flight or tax evasion is high, consumption taxes are most likely to be effective – however, they are also more likely to be regressive. Recently, studies have warned about the potential effect of increased taxation on poverty, particularly in countries where most new taxes will be based on consumption (Higgins and Lustig, 2016).

The capacity to tax depends not only on the resources available to tax, but also on the ability of the government to collect those taxes. Typical approaches to tax reform in the development community –such as public financial management reforms– have thus emphasized the importance of capacity-building for better tax administration. The literature identifies two key elements of administrative capacity which matter for DRM: the efficiency of the system (related to the costs of tax collection and enforcement) and the effectiveness of the system (related to the transparency and accountability of tax collection and enforcement). Administrative factors such as low wages for public sector employees, lack of skilled staff, poor equipment and facilities, and complicated tax policy can all adversely affect efficiency of revenue collection (Kaldor, 1955; Bird, 2014). However, tax collection is not just a simple interaction between the taxpayer and the tax collector. Indeed, as Moore (2013) explains, “revenue agencies are highly ‘networked’ organizations.” They require the cooperation of tax collectors, tax intermediaries, politicians, and taxpayers –and they involve stakeholders from many agencies ranging from the ministry of finance to the police to the border security forces (Vazquez-Caro and Bird, 2011). With so many actors, it becomes difficult to monitor individual behavior and corruption can become embedded in network interactions. Thus, even with high administrative capacity, tax systems may be ineffective if they lack sufficient oversight and information mechanisms to enforce a rules-based system.
2.2 Political equilibrium

While the capacity to tax is a necessary condition for collecting revenue, it cannot fully explain the differences in tax collection across countries. Ultimately, the stock of administrative capacity in a country can be thought of as the result of past decisions to invest in that capacity. As Di John (2006) describes, “the institutional capacity of states to mobilise resources had to be created.” These decisions are the result of the governance environment, or political equilibrium, which depends on the balance of power between different actors with different interests and incentives (World Bank, 2017). This can help to explain why even countries with similar economic structures have very different rates of tax collection (Mkandawire, 2010).

The actors with more bargaining power to directly influence policy decisions tend to be actors with higher income levels (as the distribution of wealth and resources is an important source of de facto power). Thus, it would be unsurprising to find that in places with low contestability of power (high concentration of political influence) fiscal policy is also less progressive and tax laws are more easily evaded by the wealthy (Besley and Persson, 2014). Moreover, as Cárdenas (2010) proposes, if those who are currently in power may benefit from future tax avoidance, they are likely to under-invest in fiscal capacity –particularly so if there is a high likelihood that a more progressive opposition government may be elected in the next term. However, more research is needed to understand the specific institutional channels which facilitate this process –for example, Ardanaz and Scartascini, 2011 look at how legislative malapportionment may have enabled this outcome in Latin America.

Conversely, as contestability of power increases –and elites face greater social and economic pressures from below– the elites’ tax contributions tend to increase (Boix, 2003). Moreover, these dynamics can be self-reinforcing, with greater economic equality giving way to more democratic systems. As Boix (2003) argues, “since the tax [that the holders of the most productive assets] will pay in a democratic regime finally becomes smaller than the costs of repression that they would have to bear to exclude the majority of the citizens, they accept the introduction of a system of universal suffrage” (Boix, 2003, p.10).

3 Arithmetics and politics of redistribution rules:

A framework

To develop a method to measure the potential DRM constraints related to taxable capacity, this paper looks at the arithmetics of DRM from the perspective of the income of the potential tax base. It seeks to measure if that income would be sufficient to eliminate poverty using simple income redistribution rules and proposes a Poverty Eradication Capacity Index. It builds in particular on three recent efforts to quantity this capacity.
Ravallion (2010) measures the extent to which the existing distribution of income would constrain the redistribution needed to eliminate poverty in 90 countries, using a measure of the marginal tax rate on the rich. Lind and Moene (2011) develop a miser index to measure the extent to which there is poverty in the midst of affluence, by comparing absolute poverty to the total amount of resources available. Finally, Ceriani and Verme (2014) develop an income lever index to measure the monetary capacity of countries to eliminate poverty by implementing different distribution rules.

Similarly, to develop a method to measure the potential DRM constraints related to the political equilibrium of countries, this paper looks at the politics of DRM from the perspective of the concentration of resources in the hands of few individuals. It seeks to measure how that concentration may impact tax policy decisions and proposes a Political Influence Concentration Index. It builds in particular on three recent efforts to measure such influence. Gilens and Page (2014) use data from the United States to quantify the differences in policy influence between average citizens, economic elites, and business interests. Karabarbounis (2011) measures the relationship between inequality and redistribution and finds a one dollar-one vote political characterization in which income is associated with political influence. Finally, Igan and Mishra (2011) construct a database of political connections and contributions and find that they are positively associated with the likelihood that legislators change their position on financial deregulation.

Consider a population \( N \) made of \( i = 1, 2, \ldots, n \) individuals, \( n \in \mathbb{N} \). Each individual is endowed with a level of welfare \( y_i \in \mathbb{R}^+ \), which is the monetary value according to which poverty is measured (it can either be income or consumption according to the prevailing methodology in the country). Without loss of generality, let us assume that incomes are ordered, such that \( y_1 \leq y_2 \leq y_3 \leq \cdots \leq y_n \).

Population \( N \) can be divided into two subgroups: poor and non-poor individuals. The set of poor individuals in the population \( Q^p \) is defined as the set of individuals whose welfare level is smaller than the poverty line \( z \): \( Q^p = \{ i : y_i < z \} \). The set of non-poor individuals in the population, \( Q^{-p} \) is defined as the set of individuals whose welfare is greater or equal to the poverty line: \( Q^{-p} = \{ i : y_i \geq z \} \). Non-poor individuals, in turn, may belong to two distinct welfare groups: the middle class and the rich, defined as follows. The set of middle class individuals, \( Q^m \) is defined as the set of non-poor individuals whose welfare level is below the affluence line \( z^r \): \( Q^m = \{ i : z \leq y_i < z^r \} \). Finally, the set of rich individuals, \( Q^r \) is the set of those non-poor individuals whose welfare is above the affluence line: \( Q^r = \{ i : y_i \geq z^r \} \). Summarizing: \( N = Q^p \cup Q^{-p} = Q^p \cup Q^m \cup Q^r \). The poverty line \( z \) and the affluence line \( z^r \) are considered as given.
3.1 Arithmetics

In a static setting, where we allow only redistribution to happen, and there is no growth, the domestic resources to eradicate poverty are to be found among individuals above the poverty line.\(^1\) The redistribution rules to be implemented depend on a normative decision which, in turn, depends on the preferences of policy makers, as underlined in Ceriani and Verme (2014). In this paper, we consider two possible alternatives: (i) each non-poor individual should transfer the same proportion of her welfare in excess of the poverty line to the poor and (ii) each rich individual should transfer the same proportion of her welfare in excess of the affluence line to the poor.\(^2\) In this setting, therefore, a poverty eradication policy is a set of transfers from those above the poverty (or affluence) line to those below the poverty line, aimed at narrowing (and possibly filling up) the shortfalls of individuals belonging to \(Q^p\), without making anybody else poor and avoiding re-ranking.

The poverty eradication policy is hence defined by a marginal tax rate \(\tau \in [0, 1]\) and by the normative statement on whether the middle class should be accountable or not for redistribution. In the first case, under redistribution rule (i), the marginal tax rate will be levied on the sum of the welfare levels in excess of the poverty line, \(G^\sim p\), defined as 
\[
G^\sim p = \sum_{i \in Q^\sim p} (y_i - z).
\]
In the second case, under redistribution rule (ii), the marginal tax rate will be levied on the sum of the welfare levels in excess of the affluence line, \(G^r\), defined as 
\[
G^r = \sum_{i \in Q^r} (y_i - z^r).
\] The set \((\tau, G^\delta)\) defines therefore the poverty eradication policy and the total transfer amount \(T^\delta : T^\delta(\tau, G^\delta)\), where \(\delta = \sim p\) under rule (i) and \(\delta = r\) under rule (ii). By construction, for a given marginal tax rate \(\tau\), \(T^\sim p \geq T^r\), since the tax base \(Q^r\) is a subset of \(Q^\sim p\).

The optimal poverty eradication policy, \((\hat{\tau}, G^\delta)\), is defined by the marginal tax rate \(\hat{\tau}\) such that, according to the redistribution rule followed by the policy maker \((\delta = \sim p\) or \(\delta = r\)), the total transfer equals the sum of the poverty gaps of all poor individuals \((G^p)\): 
\[
\hat{\tau} G^\delta = G^p, \text{ where } G^p = \sum_{i \in Q^p} (z - y_i), \text{ and } \delta = (\sim p, r).
\]
Notice that the optimal eradication policy might not be achievable in a country, as the sum of the poverty gaps might exceed the pool of available resources for any feasible level of the marginal tax rate. More generally, to each marginal tax rate \(\tau\), given the redistribution rule, corresponds a transfer level \(T^\delta\) which is some share of the sum of the poverty gaps in the society. This information can be summarized in a Poverty Eradication Capacity Curve, defined as follows.

**Definition 3.1** (Poverty Eradication Capacity Curve). The Poverty Eradication Capacity Curve, \(P^\delta : [0, 1] \to [0, 1]\), plots the share of poverty gap the country is able to compensate,

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\(^1\)The assumption of no growth is justified because the paper does not look at efficiency implications of taxation, which is not necessary for our argument.

\(^2\)Ceriani and Verme (2014) define the first approach Proportional Income Lever and the second Progressive Income Lever. Ravallion (2010) refers to the first approach as marginal tax rate on incomes above the poverty line and to the second as marginal tax rate on the rich.
\[
\min \left\{ 1, \frac{\tau^d}{\delta^d} \right\}, \text{ for each level of the marginal tax rate } \tau, \text{ given the redistribution rule } \delta = \{\sim p, r\} \text{ elected by the society.}
\]

Figure 1, which illustrates the case of urban India in 2011, draws the Poverty Eradication Capacity Curve under the alternative normative principles that assign responsibility for poverty eradication to all non-poor individuals \((P^{\sim p})\) and to only rich individuals \((P^r)\). It shows that the optimal poverty eradication policy corresponds to a marginal tax rate of about 20 percent levied on the excess-poverty gaps of the non-poor, which is sufficient to compensate the sum of poverty gaps in the population. On the other hand, taxing away all the affluence gaps of the rich individuals \((\tau = 1, \delta = r)\), the society can at most collects enough revenue to compensate 60 percent of the total sum of poverty gaps, and therefore no optimal policy exists under redistribution rule (ii).

A country enjoys the highest possible capacity of poverty eradication when the Poverty Eradication Capacity curve is \(\Gamma\)-shape: even with a marginal tax rate close to zero on the individuals responsible for poverty eradication, the society is able to close 100 percent of the poverty gaps. Conversely, if the country cannot compensate the sum of poverty gaps even when the marginal tax rate approaches 1, hence the Poverty Eradication Capacity curve coincides with the \(x\)-axis, we would say that the capacity of the country to mobilize resources for poverty eradication is minimum. Figure 2 shows that a generic Poverty
Eradication Capacity curve divides the space of analysis in two areas $A$, above the curve, and $B$, below the curve. In a country where the poverty eradication capacity is maximum, $A$ will be zero (see Figure 2). On the other hand, in a country where the poverty eradication capacity is minimum, $B$ will be zero. Using this intuition, and the fact that $A + B = 1$, we summarize the information of the Poverty Eradication Capacity Curve in a single index, the Poverty Eradication Capacity Index, defined below in equation (1).

**Definition 3.2. Poverty Eradication Capacity Index.** For each $\delta \in \sim p, r$:

$$I(P^{\delta}) = \int_0^1 P^{\delta}(x)dx.$$  \hspace{1cm} (1)

The index of poverty eradication capacity will therefore tend to 1, indicating maximum capacity, when the sum of poverty gaps in the country is zero, while it will be equal to 0 when the sum of excess poverty (or affluence) gaps is zero.

### 3.2 Politics

The arithmetics of domestic resource mobilization describes the accounting capacity of a country to eradicate poverty solely through DRM, but it does not define the political feasibility of mobilizing such resources. Note that even in a perfectly functioning democratic
setting, where the policy makers are elected on a platform favoring a redistribution agenda, political elites tend to express a different attitude towards redistribution (i.e. less progressive) than the general population, as Fisman, Jakiela, Kariv, and Markovits (2015) prove in a lab setting.

By design, a redistributive policy clearly defines (at least in the short term) winners and losers. In this simple exercise, poor individuals receiving the transfer are the winners, non-poor individuals who provide the resources for the transfers are the losers. The relative political power of winners and losers of the reforms is crucial in determining whether the redistributive policy will be designed and then implemented with the expected results.

In proposing a new tool to assess the political capacity of a country to collect domestic resources for redistribution, we follow two streams of political science and economics literature: on one hand, the contributions assessing that economic inequality is essentially political inequality (Atkinson, Piketty, and Saez, 2011; Gilens, 2012); on the other, the literature on collective action, assessing that concentrated minority interests tends to trump diffuse majority interest, due to increasing difficulties of inducing coordination and fostering cooperation as a group becomes larger (Olson, 1965 World Bank, 2017).

A disproportionate concentration of income and wealth, particularly at the very top of the distribution, may result in disproportionate power to influence the institutional design, making it difficult to implement pro-poor reforms. This undue political influence is the direct expression of income inequality when implemented policies are chosen because of the money used to influence the political process. This is particularly evident in countries where lobbying is a diffuse and regulated system, as Igan and Mishra (2011) show for the case of the United States during the years 1999-2006, when lobbying expenditure from the financial sector is found to be positively associated to the probability that legislators switch their position in favor of deregulation of that industry. Also in the United States, Gilens and Page (2014) are able to show that economic and business elites are much more effective in having preferred policies passed (or unfavored policies blocked) than mass-based interest groups. Finally, Karabarbounis (2011) proves that more money is associated with more political power using a panel of OECD countries over the period 1975-2001, supporting the argument that political influence is not uniformly distributed across voters, but that richer individuals’ votes weigh more. But inequality trumps the political voice of the poorer also indirectly. In particular, Solt (2008) shows for the case of Europe that inequality depresses political interest and participation of everyone except the very affluent in the society. In fact, as argued in World Bank (2017), citizens experiencing a persistent status of deprivation and the unresponsiveness of the state with respect to issues of importance to them may decide to opt out from the political process, therefore lowering further the probability that redistributive policies are passed.
Moreover, following well-known collective action results, we know that the concentration of political power in the hands of a rich elite may not be easily counterweighted by the diffuse political power of the potential winners as it might be difficult to organize their collective action (Olson, 1965). Therefore, political influence is positively associated with the amount of economic resources a group of individuals controls and negatively associated with the number of individuals in that group. The same amount of income buys more political influence if it is concentrated in the hands of one or few individuals, as opposed to belonging to a larger set of individuals, as cooperation and coordination are more difficult to achieve in larger groups.

Given this well established relationship between the unequal distribution of economic resources and the unequal distribution of influence in the political process, we propose an indicator to assess the concentration of political influence starting from the distribution of income in the society. Our new approach relies on two hypotheses. The first one is that the capacity to influence the political agenda is linear in the income levels of individuals (in line with the one dollar, one vote theory empirically tested by Karabarbounis, 2011, cited above). The second one is that individuals may form coalitions to support implementation of a policy, and that the political influence of these coalitions is linear in the total income of the members of the coalition.

Let us define $Q(q^u)$ as the set of individuals belonging to the upper $q$-th quantile of more affluent individuals in the society, and $Q(q^b)$ as the set of individuals belonging to the bottom $q$-th quantile of poorer individuals in the society, where $q^u, q^b \in [0, 1]$. Moreover, let $Y(q^u)$ be the sum of incomes belonging to the top $q$-th quantile of more affluent individuals in the society:

$$Y(q^u) = \sum_{i \in Q(q^u)} y_i$$

(2)

Symmetrically, let $Y(q^b)$ be the sum of incomes belonging to the $q$-th quantile of poorer individuals in the society:

$$Y(q^b) = \sum_{i \in Q(q^b)} y_i$$

(3)

Recall that in our setting, richer individuals, being losers of redistributive reforms, oppose to their implementation, and the strength of their political opposition is proportional to their income. To outweigh this opposition from the top, poorer individuals (the winners of the redistributive policy) need to form a coalition. For each rich individual at the top, the coalition of individuals at the bottom needs to be at least large enough for the sum of poor individuals' incomes to equalize the income of the rich individual. The larger the coalition that needs to be created, the more difficult it is for the poor to successfully coordinate their efforts, due to the collective action problem, and the redistribution policy is less likely to be implemented.
In a society with perfect equality in income distribution, nobody’s political influence can outweigh others’. A society has a higher concentration of political influence when, for each rich individual at the top, a larger coalition of poor individuals at the bottom needs to be created in order to successfully implement a poverty eradication policy by mobilizing resources to devote it to redistribution. As a tool to evaluate the concentration of political influence in the society, we introduce the following Political Influence Concentration Curve.

**Definition 3.3 (Political Influence Concentration Curve).** The Political Influence Concentration Curve, \( \Pi : [0, 1] \rightarrow [0, 1] \), plots the share of individuals at the bottom of the distribution needed to equalize the income levels of each \( q^u \) quantile of individuals at the top of the welfare distribution in the society, with \( q^u = [0, 1] \).

In other words, for each share of individuals at the top of the distribution \( (q^u \in [0, 1]) \), with sum of incomes \( Y(q^u) \), \( \Pi \) plots the share of population from the bottom \( (q^b) \) such that \( Y(q^b) = Y(q^u) \). In case of perfect equality in the distribution of welfare, each individual has the same political influence, and \( \Pi \) would correspond with the 45 degree line. In case of perfect inequality, a single individual in the society has so much political influence that it cannot be counterweighted by any set of individuals in the society, and \( \Pi \) will be \( \Gamma \)-shaped. As shown in Figure 3, \( \Pi \) line divides the space above the 45 degree line in two areas, \( A \) and \( B \). In a country where the political influence is all concentrated in the hands of one individuals, \( A \) will be zero. On the other hand, in a country where the political influence is equally shared by all individuals, \( B \) will be zero.

Similarly to the definition of the Poverty Eradication Capacity Index, and noticing that \( A + B = 0.5 \), we can summarize the information embedded in \( \Pi \) in a single index, the Political Influence Concentration Index, defined as follows in equation (4).

**Definition 3.4. Political Influence Concentration Index.**

\[
I(\Pi) = \left( 2 \int_0^1 \Pi(x) \, dx \right) - 1. \tag{4}
\]

The index is bounded between zero (when \( B \) is zero) and one (when \( A \) is zero). In particular, the index is zero when no coalition needs to be formed: if incomes are equally distributed, political influence is diffused across the society. On the other hand, the index is one, when no coalition, for as large as it can be, equalizes the political influence of the single individual in the society who owns all income.

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\(^3\) Note that, although the definition is similar to the Lorenz curve, using our notation, the Lorenz curve plots instead for each \( q^b \in (0, 1] \) the corresponding \( Y(q^b) \) as a share of \( Y(1) \).
The capacity of a state to mobilize domestic resources for the eradication of poverty, therefore, is positively associated with the resource-based capacity of the state, as measured by $I(P^b)$, but negatively associated with the concentration of political influence, as measured by $I(\Pi)$. Given the same taxable capacity, in fact, any pro-poor redistribution scheme will be more difficult to be voted and implemented in a country where the political equilibrium is unbalanced in favor of rich elites.

4 Data

In this paper, we use the World Bank PovcalNet database, in the form put together by Dykstra, Dykstra, and Sandefur (2014). PovcalNet is a computational tool developed by the World Bank to allow researchers to replicate the official poverty estimates, as well as develop new estimates under different assumptions, namely, different poverty lines and different grouping of countries.\textsuperscript{4}

\textsuperscript{4}The tool is accessible online, where the user selects the country, the year for the analysis (among the available years for each country) and a poverty line. PovcalNet then returns the headcount index for the selected poverty line.
Dykstra, Dykstra, and Sandefur (2014), by automatizing the sourcing of results from the World Bank website, collected 10,000 points from the underlying distribution of income or consumption for each country and each year in the PovcalNet database. The resulting data set is, using the words of the authors, *a data set of distributions, not the original micro survey data* (Dykstra, Dykstra, and Sandefur, 2014, p.1).

We use data from the most recent year available for 129 countries featured in the database. Only for 10 countries in the data set is the available survey older than 2000, while for 44 countries it is from 2010 or more recent. The countries represented in the data set cover all income groups and regions in the word. Appendix A summarizes the list of countries and corresponding years.

5 Is poverty reduction feasible through DRM? The facts

5.1 Arithmetics

The interaction between poverty level, optimal marginal tax rate required to eliminate poverty, and the political feasibility is not straightforward. The empirical relation between headcount poverty and the optimal marginal tax rate on the non-poor to eradicate poverty is positive and increasing: the higher the share of population below the poverty line, the higher the marginal tax rate that needs to be levied on the excess-poverty gaps of the non-poor in order to eradicate poverty. Nevertheless, the same poverty rate may correspond with very different patterns in the Poverty Eradication Capacity Curve. Take, for example, the cases of Namibia and Senegal (Figure 4).

The two countries have about the same share of individuals living below the poverty line of 2 dollars per day in 2005 purchasing power parities (51 percent in Namibia and 55 percent in Senegal). On the other hand, they differ very much with respect to the arithmetics of their redistribution capacity. Namibia’s poverty eradication capacity curve lays above Senegal’s regardless of the redistribution rule (whether the non poor, left panel, or the rich, right panel, are taxed), which means that for any possible marginal tax rate on excess-poverty (or excess-affluence) gaps, Namibia will be able to compensate a larger share of poverty gaps than Senegal. When the society considers all non-poor individuals responsible for poverty eradication, the optimal marginal tax rate is about 16 percent in Namibia and

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5We are aware of the disclaimer posted on PovcalNet which advises against using the tool for tracing out the entire distribution of income or consumption. We are also aware of issues related to the use of secondary databases for distributional analysis (Atkinson and Brandolini, 2001). Nevertheless, the data set made available from the effort of Dykstra, Dykstra, and Sandefur (2014) is an incredible asset to researchers, as it provides an approximation of the welfare distribution for all available countries and available years, in a relatively computationally lean form. We are aware that any results here reported, should be validated by using the underlying microdata, whenever available for the analysis.
50 percent in Senegal (Figure 4, left panel). When only the rich are subject to taxation to collect resources to be transferred to the poor, Namibia’s optimal marginal tax rate is about 55 percent, while Senegal would be able to transfer less than 10 percent of the total poverty gap by levying a marginal tax rate of 100 percent on the excess affluence gaps of the rich individuals.

The Poverty Eradication Capacity Index $I(P^{−p})$ shows a clear non-linear negative relationship with the level of poverty in the countries (see Figure 5, left panel), while the relationship is less evident in the case of $I(P^r)$ (Figure 5, right panel). Recall that the index equals zero when there is no capacity to eradicate poverty by transferring resources from non-poor (or rich) to poor individuals; it tends to one when poverty is solved with a marginal tax rate on responsible individuals which tends to zero. At the extreme, it is equal to one when poverty is zero.

Our results show that for poverty levels lower than 30 percent, $I(P^{−p})$ is very close to one, indicating that countries can easily collect enough resources to eradicate poverty levying a small marginal tax rate on non-poor individuals. When poverty levels range from 40 to 60 percent, the relationship between poverty and $I(P^{−p})$ seems convex, to finally become concave for higher poverty levels. Note that the tipping point around a poverty headcount of 60 percent corresponds to about $I(P^{−p}) = 0.5$, which corresponds to a Poverty Eradication Capacity Curve coincident to the diagonal, or to an optimal marginal tax rate equal to 1. In other words, countries with an $I(P^{−p})$ below 0.5, are not able to eradicate poverty by taxing away the excess-poverty gaps of non-poor individuals, and the transfer covers
a smaller share of poverty gaps as the index approaches zero. Of the 27 countries in our sample having an $I(P_{>p})$ below 0.5, 22 are in Sub-Saharan Africa.

Figure 5, right panel, shows a fuzzier relationship between level of headcount poverty and the Poverty Eradication Capacity Index computed following distribution rule (ii), when the rich are considered responsible for poverty eradication, $I(P_r)$. Our results show that for poverty levels higher than 30 percent (62 countries in our sample), only four countries (Cape Verde, Namibia, Nicaragua and South Africa) have an $I(P_r)$ greater than 0.5 (respectively, 0.64, 0.72, 0.78 and 0.96), which means that no marginal tax rate levied on the excess-affluence gaps of the rich generates enough revenue to close the poverty gaps.

Figure 6 shows the relation between the two different Poverty Eradication Capacity Indices obtained by applying the underlying two different redistributive rules: $I(P_{>p})$ and $I(P_r)$. Given the sample of our countries, it seems that countries with $I(P_r) \geq 0.2$ are also those with an $I(P_{>p}) \geq 0.9$: countries which are able to eradicate (at least some) poverty, by sourcing resources from the affluence gaps of their rich individuals, usually can solve almost all their poverty by sourcing resources from the excess-poverty gaps of non-poor individuals. Contrarily, wherever $I(P_{>p}) \leq 0.7$, hardly any country is able to raise any resources from those above the affluence line.
5.2 Politics

Even if a country has the arithmetic capacity to eradicate poverty using domestic resources, it may not be possible to implement redistributive policies because political power is concentrated in the hands of a few, rich individuals whose interests contrasts with those of the poor. Countries with a higher concentration of political influence need to mobilize larger coalitions of individuals to counter-weight the political influence in the hands of the few.

Take the above example of Namibia and Senegal: the two countries have similar poverty rates and we showed that the optimal marginal tax rate on the non-poor is about 16 percent in Namibia and 50 percent in Senegal. From the point of view of the arithmetics of domestic resource mobilization, therefore, Namibia seems better off than Senegal, since the tax effort on the non-poor is smaller. Nevertheless, Figure 7 shows that the Political Influence Concentration Curve of Namibia always lies above that of Senegal: to counterweight each rich individual in their own countries, poor individuals in Namibia need to coordinate larger coalitions than poor individuals in Senegal. Therefore, although mobilizing resources in Namibia is easier than in Senegal considering a mere accounting exercise, it is exactly the opposite when taking into account the political equilibrium in the two countries.

Figure 8 shows the political influence concentration index and the poverty headcount
Figure 7: Political Influence Concentration Curve, example

There is no clear pattern among the two indices: political concentration may be very high or very low for each level of poverty. Nevertheless, we can see some regional patterns. Almost all countries in Europe and Central Asia and North Africa and the Middle East are found in the bottom left quadrant: these are countries where both the poverty level and the political influence concentration indices are relatively low with respect to their averages (represented, respectively, by the vertical line at about 0.35 and the horizontal line right above 0.7 in Figure 8). The largest share of countries in Sub-Saharan Africa are instead mostly positioned in the upper-right quadrant, where both the political influence concentration index and the headcount poverty index are higher than average. Furthermore, almost all countries in Latin America have lower poverty rates than average, but higher political influence concentration.

One piece of empirical evidence is worth noticing. Although theory defines the lower bound for $I^\Pi$ being zero when the political power is equally shared among all individuals in the society, the data show that almost all countries have a level of Political Influence Concentration Index higher than 0.5 (the only two exceptions are the Czech Republic, with 0.498 and Ukraine with 0.493).
5.3 Linking Arithmetics with Politics

Figure 9 shows the relationship between the Arithmetics of DRM, as measured by $I(P^δ)$ (with $δ = \sim p$ in the left panel and $δ = r$ in the right panel), and the Politics of DMR, as measured by $I(Π)$. In particular, the vertical and horizontal lines correspond to the average value of the two indices among the analyzed countries, dividing the space in four quadrants. The West quadrants in each figure correspond to the set of countries where there is lower capacity to mobilize resources for poverty eradication. The South quadrants in both figures, on the other hand, define the set of countries which are more likely to enact some redistribution, thanks to a lower concentration of political influence.

Among those countries with a poverty eradication capacity close to one, where a small transfer from the non-poor or the rich would be enough to solve poverty, we expect those in the South-East quadrant to have more difficulties in actually mobilizing resources than those in the North-East quadrant, due to the higher concentration of political power. This should be even more striking when, under redistribution rule (ii), only the rich are responsible for eradicating poverty, since the optimal marginal tax rate would be higher, and this would foment stronger opposition. When we check the fiscal effort of countries in our sample, we find evidence supporting our theoretical hypothesis. Figure 10 shows the share of tax revenue on GDP for countries in our sample, which we group according to the
quadrant they belong to in Figure 9. The figures show that countries with higher capacity (higher poverty eradication capacity index, quadrants ne and se) are also those where tax revenue is a larger share of GDP. Moreover, among countries with higher arithmetical capacity to mobilize resources, countries with lower concentration of political influence (se quadrant), have a higher probability of collecting higher taxes than countries with a higher concentration of political power (ne quadrant), particularly when the arithmetic capacity of DRM of a country is measured starting from the normative statement that only the rich are responsible to transfer resources to the poor (Figure 10, right panel).
Figure 10: Arithmetics and Politics and Fiscal Effort

Note: nw, ne, se, sw refer to the quadrants defined above in Figure 9. Namely, nw and ne refers to those countries where political influence concentration ($I(\Pi)$) is above average, and the poverty eradication capacity ($I(P^{\sim}\rho)$ in the left panel, $I(P)$ in the right panel) is, respectively, below and above average. Categories sw and se refers instead to those countries where political influence concentration ($I(\Pi)$) is below average, and the poverty eradication capacity ($I(P^{\sim}\rho)$ in the left panel, $I(P)$ in the right panel) is, respectively, below and above average. The figure shows a box and whiskers plot. The box ranges from the 25th percentile to the 75th percentile. The line in the middle of the box shows the median. The two lines on either side of the box extend to minimum and maximum values, excluding outliers. The dots indicate outliers.

6 Conclusion

While the importance of domestic resource mobilization in achieving sustainable development is well-established, attention to the subject has been growing in recent years. Indeed, the focus in international policy-making circles has been shifting towards strengthening the capacity of governments to mobilize their own resources, and increasingly moving further away from reliance on foreign aid.

A country’s ability to mobilize its own resources–expanding the flow of taxes and other income into the government’s treasuries–has advantages in terms of ownership and accountability. Being able to raise resources to invest in public spending without external financing can increase ex-ante accountability. For example, it encourages countries’ development path to reflect domestic needs and long-term goals rather than donors’ (often changing) preferences and priorities. It can also strengthen ex-post accountability and legitimacy. As citizens contribute with taxes, they demand better governments; endowing governments with more incentives to be responsive to their constituencies, which can contribute to more trusted and effective institutions in a virtuous cycle.
Countries face two types of constraints to mobilize revenues. One is the actual ability to raise taxes, which includes both whether resources are available to tax—the arithmetics of resource mobilization—as well as the capacity to collect those taxes. The second type of constraint refers to the notion that low fiscal revenues are often the result of a political equilibrium, where the incentives for stakeholders are aligned in such a way that there is a tendency to revert to such equilibrium. We refer to this as the politics of domestic resource mobilization. In this way, some countries may not have the resources to finance their own development; while the political equilibria in others may be such that, even though resources exist, it is unlikely that reforms will be passed to mobilize them towards reducing poverty.

This paper puts forth an accounting exercise to evaluate the feasibility to eradicate poverty using domestic resources—the arithmetic capacity—by mere redistribution. To assess the capacity of countries to eliminate poverty through redistribution we propose a new tool: an index of poverty eradication capacity. Our poverty eradication policy considers a set of transfers from those above the poverty (or affluence) line to those below the poverty line, aimed at filling up the shortfalls of poor individuals, without making anybody else poor and avoiding re-ranking.

Additionally, we propose a tool to estimate the concentration of political influence starting from the distribution of income in the society. The paper argues that the concentration of resources among few individuals can limit the feasibility of effective fiscal policies to eradicate poverty, both in terms of obtaining revenues as well as regarding social spending. We consider that richer individuals, who would lose out from redistributive reforms, would oppose their implementation; and that the strength of their political opposition is proportional to their income. To outweigh this opposition from the top, poorer individuals (the potential winners from redistributive policies) would need to form a coalition. Countries where political influence is more concentrated would need to mobilize larger coalitions of individuals to counter-balance the political influence in the hands of the few.

We apply this methodology, using the most recent data from the World Bank PovcalNet database for over 120 developing countries. Our results show that many countries do not have the resources to finance their own development out of poverty. Moreover, the countries that have the arithmetic capacity to do so would likely face great resistance to implement redistributive policies as political power is concentrated among a few rich individuals whose interests diverge from those of the poor. These results suggest that domestic resource mobilization, beyond an issue of political will, implies a challenge related to the concentration of resources among powerful groups and their ability to influence policy decisions.
References

ARDAÑAZ, M., and C. SCARTASCINI (2011): “Why Don’t We Tax the Rich? Inequality, Legislative Malapportionment, and Personal Income Taxation around the World,” IDB Working Paper Series IDB-WP-282, Inter-American Development Bank.

ATKINSON, A., and A. BRANDOLINI (2001): “Promise and pitfalls in the use of ‘secondary’ data-sets: income inequality in OECD countries as a case study,” Journal of Economic Literature, 39, 771–799.

ATKINSON, A., T. PIKETTY, and E. SAEZ (2011): “Top Incomes in the Long Run of History,” Journal of Economic Literature, 49(1), 3–71.

BESLEY, T., and T. PERSSON (2014): “Why Do Developing Countries Tax So Little?,” Journal of Economic Perspectives, 28(4), 99–120.

BHUSHAN, A., and Y. SAMY (2015): “Fiscal Capacity and Aid Allocation: Domestic Resource Mobilization and Foreign Aid in Low-Income Countries,” Road to addis and beyond series, UNRISD Research Note.

BIRD, R. M. (2014): “Administrative Dimensions of Tax Reform,” Annals of Economics and Finance, 15(2), 269–304.

BOIX, C. (2003): Democracy and Redistribution. Cambridge University Press.

BRAÜTIGAM, D., O. H. FJELDSTAD, and M. MOORE (eds.) (2008): Taxation and state building in developing countries: Capacity and Consent. Cambridge University Press.

CÁRDENAS, M. (2010): “State Capacity in Latin America,” Economia, 10(2), 1–45.

CERIANI, L., and P. VERME (2014): “The Income Lever and the Allocation of Aid,” The Journal of Development Studies, 50(11), 1510–1522.

DEVELOPMENT COMMITTEE (2015): “From billions to trillions: transforming development finance post-2015 financing for development: multilateral development finance,” Discussion paper, prepared jointly by the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank, the International Monetary Fund, and the World Bank Group.

DI JOHN, J. (2006): “The Political Economy of Taxation and Tax Reform in Developing Countries,” Working Paper Series RP2006/74, World Institute for Development Economic Research (UNU-WIDER).
Dykstra, S., B. Dykstra, and J. Sandefur (2014): “We Just Ran Twenty-Three Million Queries of the World Bank’s Website,” Working Paper 362, Center for Global Development.

Fisman, R., P. Jakiela, S. Kariv, and D. Markovits (2015): “The distributional preferences of an elite,” Science, 349(6254).

Gaspar, V., L. Jaramillo, and P. Wingender (2016): “Tax Capacity and Growth: Is there a Tipping Point?,” Discussion Paper WP/16/234, IMF Working Paper.

Gilens, M. (2012): Affluence and Influence: Economic Inequality and Political Power in America. Princeton University Press.

Gilens, M., and B. I. Page (2014): “Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens,” Perspectives on Politics, 12(3), 564–581.

Gupta, A. S. (2007): “Determinants of Tax Revenue Efforts in Developing Countries,” Working papers, IMF.

Higgins, S., and N. Lustig (2016): “Can a poverty-reducing and progressive tax and transfer system hurt the poor?,” Journal of Development Economics, 122, 63 – 75.

Igan, D., and P. Mishra (2011): “Three’s company: Wall Street, Capitol Hill, and K Street,” MPRA Paper 44220, University Library of Munich, Germany.

IMF, OECD, UN, and WBG (2016): “Enhancing the Effectiveness of External Support in Building Tax Capacity in Developing Countries,” Discussion paper, Prepared for Submission to G20 Finance Ministers.

Jensen, A. (2011): “State-Building in Resource-Rich Economies,” Atlantic Journal of Economics, 39(2), 171–93.

Karabarbounis, L. (2011): “One dollar, one vote,” The Economic Journal, 121, 621–651.

Kautilya, V. (4th Century BC): The Arthashastra, edited, rearranged, translated and introduced by L N Rangarajan. Penguin Books, New Delhi, New York, 1992 edn.

Keen, M. (2012): “Taxation and Development; Again,” IMF Working Papers 12/220, International Monetary Fund.

La Porta, R., and A. Shleifer (2014): “Informality and Development,” Journal of Economic Perspectives, 28(3), 109–26.

Levi, M. (1988): Of Rule and Revenue. University of California Press, Berkeley and Los Angeles, CA.
LIND, J. T., AND K. MOENE (2011): “Miserly Developments,” Journal of Development Studies, 47(9), 1332–1352.

MKANDAWIRE, T. (2010): “On Tax Efforts and Colonial Heritage in Africa,” Journal of Development Studies, 46(10), 1647–1669.

MOORE, M. (2013): “Obstacles to Increasing Tax Revenues in Low Income Countries,” Working Paper 15, International Centre for Tax and Development.

OLSON, M. (1965): The Logic of Collective Action. Harvard University Press.

PRICHARD, W., J.-F. BRUN, AND O. MORRISSEY (2012): “Donors, Aid and Taxation in Developing Countries: An Overview,” Working Paper 6, ICTD.

RAVALLION, M. (2010): “Do Poorer Countries Have Less Capacity for Redistribution?,” Journal of Globalization and Development, 1(2), 1–29.

SCHUMPETER, J. A. (1918): Die Krise des Steuerstaates. Zeitfragen aus dem Gebiet der Soziologie. reprinted in Hickel (1976), 329–379 edn.

SOLT, F. (2008): “Economic Inequality and Democratic Political Engagement,” American Journal of Political Science, 52(2), 48–60.

UNITED NATIONS (2015): “Resolution adopted by the General Assembly on 27 July 2015,” A/RES/69/313.

VAZQUEZ-CARO, J., AND R. M. BIRD (2011): “Benchmarking Tax Administrations in Developing Countries: A Systemic Approach,” eJournal of Tax Research, 9(1), 5–37.

WORLD BANK (2017): World Development Report 2017: Governance and the Law. The World Bank.
## Appendix A - List of Tables

Table 1: List of countries years

| country               | year  | P0    | \(I(P_{cp})\) | \(I(P)\)  | \(I(Π)\) |
|-----------------------|-------|-------|----------------|-----------|--------|
| Albania               | 2008  | 0.04  | 1.00           | 0.98      | 0.63   |
| Algeria               | 1995  | 0.24  | 0.97           | 0.24      | 0.64   |
| Angola                | 2009  | 0.67  | 0.47           | 0.01      | 0.75   |
| Argentina–Urban       | 2010  | 0.02  | 1.00           | 1.00      | 0.76   |
| Armenia               | 2010  | 0.20  | 0.98           | 0.63      | 0.60   |
| Azerbaijan            | 2008  | 0.03  | 1.00           | 0.99      | 0.63   |
| Bangladesh            | 2010  | 0.77  | 0.25           | 0.00      | 0.61   |
| Belarus               | 2011  | 0.00  | 1.00           | 1.00      | 0.50   |
| Belize                | 1999  | 0.22  | 0.98           | 0.93      | 0.87   |
| Benin                 | 2003  | 0.75  | 0.30           | 0.02      | 0.71   |
| Bhutan                | 2012  | 0.13  | 0.99           | 0.94      | 0.71   |
| Bolivia               | 2008  | 0.25  | 0.98           | 0.92      | 0.89   |
| Bosnia and Herzegovina| 2007  | 0.00  | 1.00           | 1.00      | 0.66   |
| Botswana              | 1994  | 0.49  | 0.88           | 0.29      | 0.84   |
| Brazil                | 2009  | 0.11  | 0.99           | 0.99      | 0.88   |
| Bulgaria              | 2007  | 0.00  | 1.00           | 1.00      | 0.53   |
| Burkina Faso          | 2009  | 0.73  | 0.38           | 0.04      | 0.73   |
| Burundi               | 2006  | 0.93  | 0.03           | 0.00      | 0.64   |
| Cambodia              | 2009  | 0.50  | 0.84           | 0.11      | 0.68   |
| Cameroon              | 2007  | 0.30  | 0.96           | 0.39      | 0.70   |
| Cape Verde            | 2002  | 0.41  | 0.93           | 0.64      | 0.84   |
| Central African Republic| 2008 | 0.80  | 0.20           | 0.00      | 0.81   |
| Chad                  | 2003  | 0.83  | 0.13           | 0.00      | 0.71   |
| Chile                 | 2009  | 0.03  | 1.00           | 1.00      | 0.87   |
| China                 | 2009  | 0.27  | 0.97           | 0.78      | 0.77   |
| China–Rural           | 2009  | 0.46  | 0.88           | 0.25      | 0.75   |
| China–Urban           | 2009  | 0.03  | 1.00           | 0.99      | 0.66   |
| Colombia              | 2010  | 0.16  | 0.99           | 0.98      | 0.89   |
| Comoros               | 2004  | 0.65  | 0.63           | 0.02      | 0.83   |
| Congo, Dem. Rep       | 2006  | 0.95  | 0.02           | 0.00      | 0.78   |
| Congo, Rep            | 2005  | 0.74  | 0.36           | 0.02      | 0.81   |
| Costa Rica            | 2009  | 0.06  | 1.00           | 0.99      | 0.84   |
| Croatia               | 2008  | 0.00  | 1.00           | 1.00      | 0.64   |
| Czech Republic        | 1996  | 0.00  | 1.00           | 1.00      | 0.50   |
| Côte d’Ivoire         | 2008  | 0.46  | 0.85           | 0.10      | 0.73   |
| Djibouti              | 2002  | 0.41  | 0.89           | 0.15      | 0.72   |
| Dominican Republic    | 2010  | 0.10  | 1.00           | 0.99      | 0.80   |
| Ecuador               | 2010  | 0.11  | 0.99           | 0.98      | 0.83   |
| Egypt, Arab Rep       | 2008  | 0.15  | 0.98           | 0.69      | 0.57   |
| El Salvador           | 2009  | 0.17  | 0.98           | 0.94      | 0.81   |
| Estonia               | 2004  | 0.02  | 1.00           | 1.00      | 0.66   |
| Ethiopia              | 2011  | 0.66  | 0.49           | 0.04      | 0.63   |
| Fiji                  | 2009  | 0.23  | 0.98           | 0.85      | 0.75   |
| Gabon                 | 2005  | 0.20  | 0.98           | 0.89      | 0.75   |
| Country                  | Year | Gini Coefficient | HDI Score | GDP per Capita | FDI Score |
|-------------------------|------|------------------|-----------|----------------|-----------|
| Gambia, The             | 2003 | 0.56             | 0.79      | 0.15           | 0.81      |
| Georgia                 | 2010 | 0.36             | 0.92      | 0.22           | 0.73      |
| Ghana                   | 2006 | 0.52             | 0.80      | 0.09           | 0.75      |
| Guatemala               | 2006 | 0.26             | 0.98      | 0.94           | 0.90      |
| Guinea                  | 2007 | 0.70             | 0.39      | 0.00           | 0.71      |
| Guinea-Bissau           | 2002 | 0.78             | 0.21      | 0.00           | 0.66      |
| Guyana                  | 1998 | 0.18             | 0.98      | 0.91           | 0.77      |
| Haiti                   | 2001 | 0.78             | 0.41      | 0.08           | 0.91      |
| Honduras                | 2009 | 0.30             | 0.97      | 0.90           | 0.88      |
| Hungary                 | 2007 | 0.00             | 1.00      | 1.00           | 0.59      |
| India                   | 2010 | 0.69             | 0.48      | 0.04           | 0.65      |
| India–Rural             | 2010 | 0.74             | 0.31      | 0.02           | 0.58      |
| India–Urban             | 2010 | 0.58             | 0.74      | 0.08           | 0.72      |
| Indonesia–Rural         | 2011 | 0.45             | 0.87      | 0.03           | 0.64      |
| Indonesia–Urban         | 2011 | 0.42             | 0.91      | 0.31           | 0.75      |
| Iran, Islamic Rep       | 2005 | 0.08             | 1.00      | 0.97           | 0.69      |
| Iraq                    | 2007 | 0.21             | 0.97      | 0.24           | 0.58      |
| Jamaica                 | 2004 | 0.05             | 1.00      | 1.00           | 0.79      |
| Jordan                  | 2010 | 0.02             | 1.00      | 1.00           | 0.66      |
| Kazakhstan              | 2009 | 0.01             | 1.00      | 0.99           | 0.55      |
| Kenya                   | 2005 | 0.67             | 0.57      | 0.07           | 0.80      |
| Kyrgyz Republic         | 2011 | 0.22             | 0.97      | 0.32           | 0.62      |
| Lao PDR                 | 2008 | 0.66             | 0.56      | 0.05           | 0.69      |
| Latvia                  | 2009 | 0.01             | 1.00      | 1.00           | 0.64      |
| Lesotho                 | 2003 | 0.62             | 0.68      | 0.08           | 0.85      |
| Liberia                 | 2007 | 0.95             | 0.03      | 0.00           | 0.69      |
| Lithuania               | 2008 | 0.00             | 1.00      | 1.00           | 0.68      |
| Macedonia, FYR          | 2010 | 0.09             | 1.00      | 0.99           | 0.75      |
| Madagascar              | 2010 | 0.03             | 0.05      | 0.00           | 0.78      |
| Malawi                  | 2010 | 0.82             | 0.19      | 0.02           | 0.78      |
| Malaysia                | 2009 | 0.02             | 1.00      | 1.00           | 0.78      |
| Maldives                | 2004 | 0.12             | 0.99      | 0.93           | 0.67      |
| Mali                    | 2010 | 0.79             | 0.16      | 0.00           | 0.61      |
| Mauritania              | 2008 | 0.48             | 0.84      | 0.12           | 0.73      |
| Mexico                  | 2010 | 0.06             | 1.00      | 0.99           | 0.81      |
| Moldova, Rep            | 2010 | 0.04             | 1.00      | 0.98           | 0.61      |
| Montenegro              | 2010 | 0.00             | 1.00      | 1.00           | 0.54      |
| Morocco                 | 2007 | 0.14             | 0.99      | 0.94           | 0.73      |
| Mozambique              | 2008 | 0.82             | 0.16      | 0.00           | 0.74      |
| Namibia                 | 2004 | 0.51             | 0.92      | 0.72           | 0.91      |
| Nepal                   | 2010 | 0.57             | 0.69      | 0.00           | 0.62      |
| Nicaragua               | 2005 | 0.32             | 0.96      | 0.79           | 0.82      |
| Niger                   | 2008 | 0.75             | 0.28      | 0.01           | 0.65      |
| Nigeria                 | 2011 | 0.78             | 0.19      | 0.00           | 0.71      |
| Pakistan                | 2008 | 0.60             | 0.66      | 0.03           | 0.58      |
| Panama                  | 2010 | 0.14             | 0.99      | 0.98           | 0.85      |
| Papua New Guinea        | 1996 | 0.57             | 0.81      | 0.26           | 0.86      |
| Paraguay                | 2010 | 0.13             | 0.99      | 0.98           | 0.87      |
| Peru                    | 2010 | 0.13             | 0.99      | 0.98           | 0.81      |
| Philippines             | 2009 | 0.42             | 0.92      | 0.27           | 0.76      |
| Country                        | Year  | 2011 | 2010 | 2009 | 2008 |
|-------------------------------|-------|------|------|------|------|
| Poland                        | 2011  | 0.00 | 1.00 | 1.00 | 0.61 |
| Romania                       | 2011  | 0.02 | 1.00 | 0.98 | 0.51 |
| Russian Federation            | 2009  | 0.00 | 1.00 | 1.00 | 0.73 |
| Rwanda                        | 2011  | 0.82 | 0.15 | 0.00 | 0.74 |
| Senegal                       | 2011  | 0.55 | 0.75 | 0.04 | 0.72 |
| Serbia                        | 2010  | 0.01 | 1.00 | 1.00 | 0.56 |
| Seychelles                    | 2007  | 0.02 | 1.00 | 1.00 | 0.67 |
| Sierra Leone                  | 2011  | 0.80 | 0.20 | 0.00 | 0.66 |
| Slovak Republic               | 2009  | 0.00 | 1.00 | 1.00 | 0.50 |
| Slovenia                      | 2004  | 0.00 | 1.00 | 1.00 | 0.58 |
| South Africa                  | 2009  | 0.31 | 0.98 | 0.97 | 0.93 |
| Sri Lanka                     | 2010  | 0.24 | 0.97 | 0.73 | 0.68 |
| St. Lucia                     | 1995  | 0.41 | 0.90 | 0.20 | 0.75 |
| Sudan                         | 2009  | 0.44 | 0.84 | 0.00 | 0.64 |
| Suriname                      | 1999  | 0.27 | 0.97 | 0.90 | 0.86 |
| Swaziland                     | 2010  | 0.60 | 0.76 | 0.14 | 0.55 |
| Syrian Arab Republic          | 2004  | 0.17 | 0.99 | 0.84 | 0.67 |
| São Tomé and Príncipe          | 2001  | 0.54 | 0.74 | 0.00 | 0.67 |
| Tajikistan                    | 2009  | 0.28 | 0.95 | 0.02 | 0.58 |
| Tanzania                      | 2007  | 0.88 | 0.08 | 0.00 | 0.69 |
| Thailand                      | 2010  | 0.04 | 1.00 | 0.99 | 0.71 |
| Timor-Leste                   | 2007  | 0.73 | 0.34 | 0.01 | 0.61 |
| Togo                          | 2011  | 0.53 | 0.77 | 0.01 | 0.70 |
| Trinidad and Tobago           | 1992  | 0.14 | 0.99 | 0.93 | 0.71 |
| Tunisia                       | 2010  | 0.04 | 1.00 | 0.99 | 0.66 |
| Turkey                        | 2010  | 0.05 | 1.00 | 0.99 | 0.71 |
| Turkmenistan                  | 1998  | 0.50 | 0.83 | 0.08 | 0.73 |
| Uganda                        | 2009  | 0.65 | 0.59 | 0.04 | 0.74 |
| Ukraine                       | 2010  | 0.00 | 1.00 | 1.00 | 0.49 |
| Uruguay                       | 2010  | 0.01 | 1.00 | 1.00 | 0.78 |
| Venezuela, RB                 | 2006  | 0.13 | 0.99 | 0.95 | 0.77 |
| Vietnam                       | 2008  | 0.43 | 0.87 | 0.06 | 0.66 |
| West Bank and Gaza            | 2009  | 0.00 | 1.00 | 1.00 | 0.66 |
| Yemen, Rep                    | 2005  | 0.47 | 0.85 | 0.13 | 0.67 |
| Zambia                        | 2010  | 0.87 | 0.13 | 0.01 | 0.87 |