WPS5287

Policy Research Working Paper 5287

Increasing Public Expenditure Efficiency in Oil-rich Economies

A Proposal

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Chief Economist Office
April 2010

Abstract

This paper proposes that, to increase the efficiency of public spending in oil-rich economies, some or all of the oil revenues be transferred to citizens, and fiscal instruments such as taxation be used to finance public expenditures. The authors develop the case as follows. First, they confirm the well-known result that public-expenditure efficiency is lower in oil-rich countries compared with other developing countries. Second, they show that this efficiency gap is associated with differences in accountability to citizens of government's spending decisions. They find that various measures of accountability are systematically weaker in oil-rich countries. They attribute this difference to the fact that oil revenues typically accrue directly to the government, unlike tax revenues, which pass through the hands of citizens. Third, they show that, controlling for a number of factors, accountability is stronger in countries that rely more on direct taxation to finance public spending. They conclude that accountability, and hence public expenditure efficiency, can be increased by transferring oil revenues to citizens and then taxing them to finance public spending. The paper reviews existing schemes that redistribute oil revenues to the population, such as the Alaska Citizen Fund, to assess the feasibility of a modest proposal in African countries. The authors conclude that, while it may be difficult to implement such a proposal in existing oil producers, there is scope for introducing it in some of Africa's new oil producers.

This paper—a product of the Chief Economist office, Africa Region—is part of a larger effort in the department to study oil revenues redistribution in Sub-Saharan Africa. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at graballand@worldbank.org.

Increasing Public Expenditure Efficiency in Oil-rich Economies: A Proposal

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Keywords: Oil, taxation, redistribution of oil revenues, accountability**.**

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1. Introduction

The literature on oil-rich economies has centered on demonstrating the (usually negative) impact of oil resources on macroeconomic stability, governance and growth. It is a fact that a great majority of oil-rich developing countries fail to diversify their economies. Oil booms' pressures on wasteful spending and corruption --the driving force behind such inefficient expenditures--is well documented and led to the concept of a "natural resource curse" (see, for example, Sachs and Warner (1995, 2001), Gylfason et al. (1999), Leite and Weidmann (1999), Auty (2001), Moore (2007)), although according to Lederman and Maloney (2007), the resource curse is not a "destiny".

Because of the negative impact of oil resources on governance, the main policy recommendations for oil-rich economies have been threefold: (i) save oil revenues for future generations and mitigate the detrimental impact of volatility of oil revenue flows by appropriate fiscal stabilization mechanisms; (ii) increase transparency and efficiency of oil revenue collection and spending; and (iii) redistribute oil revenues to citizens to limit embezzlements of public funds (Sala-i-Martin and Subramanian, 2003, Birdsall and Subramanian, 2004, Sandbu, 2006). Dewatripont et al. (2006) even describe a model in which politicians fund projects that are wasteful as a way to signal their diligence to their constituencies.

Despite the need for better public spending efficiency, results continue to be disappointing in several oil-rich economies[2] and there are a growing number of studies demonstrating at the household level that citizens do not benefit from revenues derived from oil rents (Najman et al. 2007).

The literature on the impact of an oil boom neglects another literature, which makes the link between taxation and accountability of public spending. Taxation sets

[2] That is also why Collier (2006) had also asked if aid could not be compared to oil in terms of its effect on development. He concluded that it was not the case although he acknowledged the minimal impact of some aid projects on economic and social development.

up the interaction between citizens and the state, with the former holding the latter accountable. Brautigam (2008) stresses that 'state-building is shaped by societies, and taxation is a strategic nexus between the state and society' (p.25). The state can broaden the base and enforce the collection of tax revenues. As citizens pay higher taxes, they demand better service, which requires better public expenditures. The relationship usually referred to as a *fiscal contract* is a two-way relationship because broad-based taxation raises citizens' expectation about enhanced efficiency of public expenditures and the democratic process. What Karl (2007) calls the *participation deficit*, "a lack of connection between subjects and the state, which breaks any sense of ownership of public resources or consequent citizen engagement" seems to be one of the most important challenges for oil economies. The linkage has even been highlighted as central to avoiding the natural resource curse in natural resource rich countries (OECD, 2008, McGuirk, 2010). Governments in oil-rich countries gather less revenue from domestic taxation (Henry and Springborg, 2001) and are therefore not held accountable (Bornhorst et al. 2008, Moore 2007). Capacity in tax administration is also more problematic (Knack 2008) and there emerge needs for states to enhance tax policy efficiency and administration (Levi, 1988; Bates and Lien, 1985). As governments do not rely on revenues raised from taxing their citizens, they are not held accountable (Bird et al. 2008).

However, in policy recommendations for oil-rich economies, the fiscal contract is absent in the sense that the taxation of citizens is not considered, especially in developing countries, due to the fact that (i) the tax base is limited; (ii) tax administration capacity and governance are weak; and (iii) states do not need revenues from individual taxes.

There is therefore a vicious circle, which is difficult to break: less taxation of citizens implies less accountability and public scrutiny of public spending and low efficiency and poor service delivery, which further limits possibilities to tax citizens (see McGuirk for a study of this cycle). The purpose of this paper is to try and break that vicious circle by making the case for having some or all of oil revenues

transferred directly to citizens, and then having the state tax citizens to finance public spending.

We build the case in three steps. In section 2, we show that high levels of oil revenues are associated with low levels of transparency in public budgets and efficiency in public spending. In section 3, we demonstrate empirically that without taxation of citizens, accountability of public spending is necessarily limited and without government accountability vis-à-vis citizens, public spending efficiency is likely to remain low. We conclude that transferring oil revenues to citizens and taxing them is one way of improving public spending efficiency. To see how this proposal could be implemented, in section 4, we present various schemes to redistribute oil revenues to citizens. In section 5, we present some concluding remarks and areas for future research.

2. The relationship among oil, accountability and poor outcomes of public spending

Low levels of budget transparency in oil-dependent countries are common and may lead to poor management of resource wealth over the medium to long term. Countries such as Sudan, the Democratic Republic of Congo, and Equatorial Guinea score 0 out of 100 on the Open Budget Index 2008 (Heuty et al. 2009)[3].

The problem is exacerbated by the fact that public spending per capita in oil-rich countries is much higher than in non-oil economies (see Figures 1 and 2). Not only are oil exports associated with higher public spending levels but the association is even higher in the case of large oil reserves (over 20 billion barrels). Large reserves

[3] One of the main drivers of conflict in Sudan has been the historical concentration of wealth and power in the central government in the North, at the expense of the poor majority in the rest of the country. Since 2003, the country has been undergoing an oil and gas boom, accounting for an estimated $2 billion in annual revenues, or nearly 70 percent of the country's exports. Despite the fact that the 2005 peace accord in Sudan mandated disclosure of the amount of oil revenues, neither the government in Khartoum nor that in Southern Sudan have provided reliable information, leading to suspicion that the money has been used for non-civilian purposes, which threatens the stability of the agreement (Heuty et al. 2009).

induce confidence over the economic future of the country and, based on of the rationale of export diversification, public spending is increased.

Figure 1: Public spending per capita and oil exports

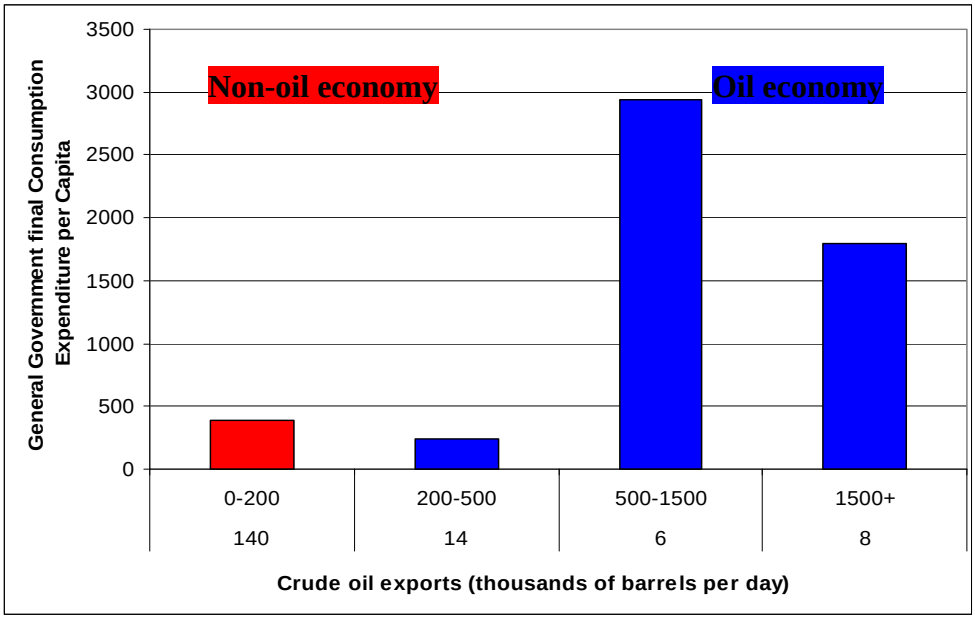
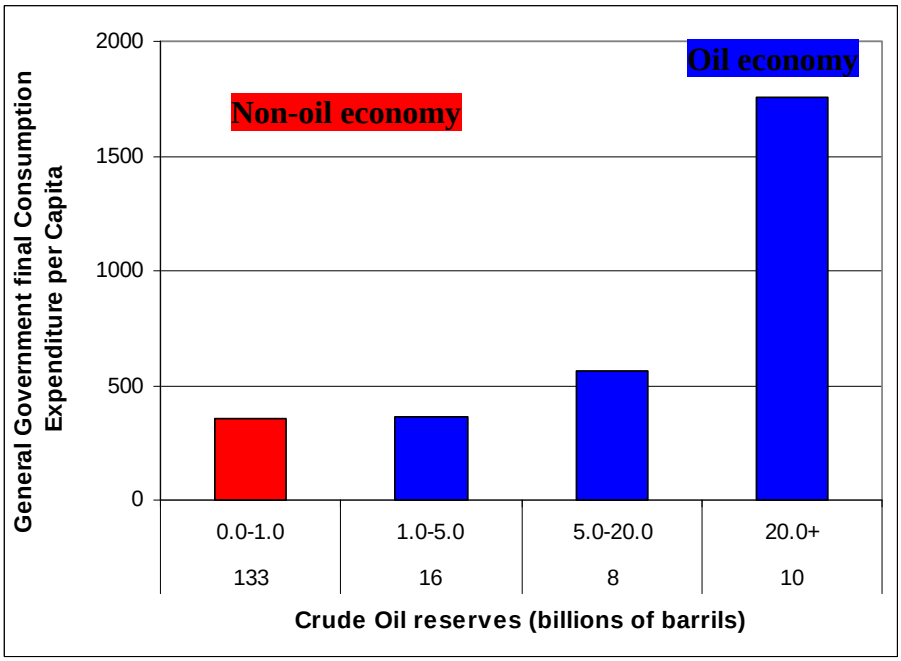
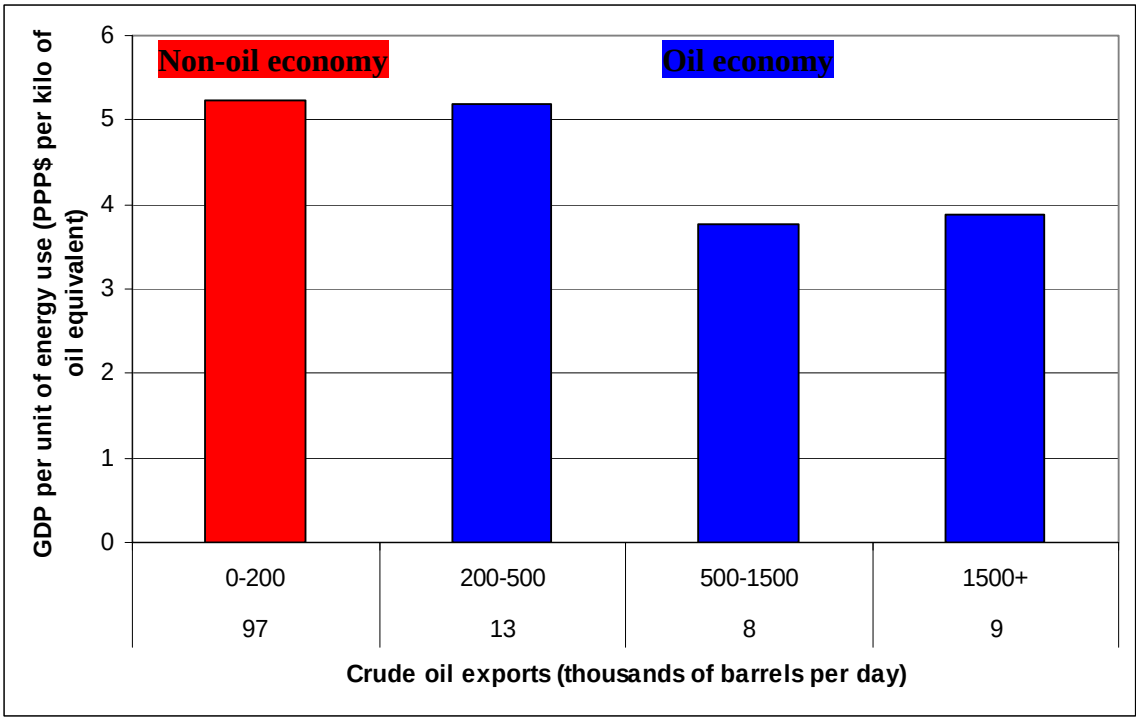


Figure 2: Public spending per capita and oil reserves



Furthermore, oil economies subsidize oil products and fuels, leading to poor energy efficiency and greater waste of resources (see Figure 3).

Figure 3: Energy efficiency and oil exports



Finally, despite several public expenditure reviews (PERs) (usually funded by donors), oil-dependent countries appear to remain with weaker expenditure control systems (one extreme being Nigeria). Table 1 gives the average scores on three dimensions of expenditure accountability for oil producers, mineral producers and non-resource-dependent economies. It is clear that oil producing countries have greater difficulty managing revenue windfalls[4]. These countries face greater obstacles in designing long-term plans and linking them to medium-term expenditure frameworks and annual budgets. Moreover, the fact that revenues derived from oil production and exports are often kept out of the regular budgets of oil-rich countries

[4] These countries, for instance, score 25 out of 100 on revenue volatility and forecasting—significantly lower than mineral producers (which score 63 out of 100) and non-resource dependent countries (54).

can further undermine public oversight over how resource windfalls are spent (Heuty and al. 2009)[5].

Table 1: Performance of countries by category on budget accountability

Categories	Oil Producers	Mineral Producers	Non-Resource Dependent Countries
Expenditure controls	22	52	48
Link policy/ planning/budget	17	37	35
Extra budgetary operations	20	31	32

Source: Heuty et al. (2009). Note: Categories are defined as average of questions of the Open Budget Index. For more information on the Survey, and the methodology used to calculate the OBI, see www.openbudgetindex.org. 100 represents a fully open budget.

Low efficiency of PERs in these countries could also probably explained by the fact that these states usually do not need much external funding (except during a period of fall of international oil prices) and therefore, external pressure from donors is, in most cases, does not bring much results (despite decades of engagement).

3. The link between taxation, accountability and poor outcome of public spending: A cross-country analysis

Having confirmed that oil producing countries have generally weaker expenditure efficiency and accountability, we now investigate how taxation may help strengthen them. We proceed in two steps. First, we show how accountability has an effect on the outcomes of public spending. Then we show how taxation can have a discernible effect on accountability in oil-dependent economies.

From the literature, we know that there is an inverse relationship between oil dependence and the level of spending in education, all other things being equal,

[5] However, the OBI 2008 results also show that countries can be transparent and accountable to the public despite substantial natural resource endowments. For example, South Africa, Norway, Botswana, and Peru all show strong performance on the OBI relative to other hydrocarbon and mineral producers (Heuty et al. 2009).

mainly due to overconfidence in the future and less of a need to invest in human capital (Gylfason, 2001). Rajkumar and Swaroop (2008) demonstrate that efficiency of public spending in education is affected by the quality of governance (measured mainly by quality of bureaucracy and the level of corruption).

In our first step, we test if accountability vis-à-vis citizens can affect the quality of public spending in education. Using the Rajkumar-Swaroop specification, we introduce a measure of voice and accountability[6] extracted from Kaufman et al. governance indicators[7].

Table 2 gives the results of this first step[8]. As expected, voice and accountability have indeed a strong association with the education outcome (secondary enrolment) even after controlling for spending level, GDP per capita and level of urbanization. The greater is the possibility for citizens to raise their voice, the better is the outcome of public spending. It is worth noting that even though control of corruption is with the expected sign, it is not significant, which may be explained by the fact that control of corruption and voice and accountability are correlated.

[6] Voice and accountability measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media (estimate). Source: Kaufman governance indicators.

[7] For definition and sources of variables, see annex 1. We used the voice and accountability measure and not the others because of the strong correlation between the four measures.

[8] Series are not highly correlated with the exception of gdp and living in urban areas.

Table 2: The Relationship between Outcome of Public Spending and Accountability

Dependent variable: Gross secondary enrollment ratio				
	(1)		(2)	
Urban population	0.25	**	0.25	**
	0.09		*0.09*	
GDP per capita	14.59	**	14.58	**
	2.02		*2.04*	
Pupil/teacher ratio, secondary	-0.44	**	-0.43	**
	0.20		*0.20*	
Public secondary education spending	0.39	**	0.37	**
	0.14		*0.14*	
Voice and accountability	**3.87**	**	2.73	*
	1.26		*1.52*	
Control of corruption			1.61	
			1.79	
Sub-Saharan Africa	-25.62	**	-23.99	**
	7.08		*7.43*	
South Asia	-32.04	**	-31.42	**
	10.43		*10.12*	
Middle East and North Africa	-27.03	**	-26.77	**
	7.15		*7.12*	
East Asia and Pacific	-21.88	**	-20.39	**
	6.53		*6.85*	
Europe and Central Asia	-29.80	**	-28.83	**
	6.90		*7.13*	
Latin America and the Caribbean	-33.49	**	-31.84	**
	6.92		*7.25*	
Constant	-45.13		-46.11	**
	17.71		*17.88*	
# of obs.	185		185	
R^2	0.77		0.77	

(standard deviation shown in italic)

The second step consists of examining if taxation can improve the accountability of government when oil-dependency lowers it.

Various recent micro empirical studies emphasize the need to broaden the tax base to citizens in order to create an interaction between citizens and governments and thereby increase spending efficiency. Table 3 summarizes the results of past studies and experiments.

Table 3: The effects on governance of state reliance on broad taxation

Immediate effects	Intermediate effects	Direct governance outcomes
Effects on the state The state becomes focused on obtaining revenue by taxing citizens	(i) The state is motivated to promote citizen prosperity (ii) The state is motivated to develop bureaucratic apparatuses and information sources to collect taxes effectively	More responsiveness More bureaucratic capability
Effects on citizens The experience of being taxed engages citizens politically	(i) (Some) taxpayers mobilise to resist tax demands and/or monitor the mode of taxation and the way the state uses tax revenue	More accountability
Results of interaction States and citizens begin to bargain over revenues. Taxpayers comply with tax demands in exchange for some institutionalised influence over the level and form of taxation and the uses of revenue (i.e. public policy).	(i) Taxes are more acceptable and predictable, and the taxation process more efficient (ii) Better public policy results from debate and negotiation (iii) Wider and more professional scrutiny of how public money is spent (iv) The legislature (assuming one exists) is strengthened relative to the executive	More responsiveness, political and bureaucratic capability More responsiveness and political capability More accountability More accountability

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Source: OECD 2008 adapted from Moore (2007).

In addition to the overall level of taxation, the shift from trade taxes to more visible taxes of individuals appears to enhance accountability of the government. For example, although a VAT is an indirect tax, it has a certain degree of visibility. It is a tax on general consumption and hence relatively broad-based. Therefore it can effectively mobilize taxpayers while relieving the burden of bookkeeping on small businesses through commonly used threshold exemptions. VAT has been highly

visible in Ghana and Uganda, where its introduction was contentious, and where recurrent political debate about VAT rates suggests that its political effect has been quite direct (OECD 2008).

Therefore, in our second step, we test if the share of various taxes has an impact on accountability vis-à-vis citizens. The greater is the share of taxes on trade (the least visible type of tax, and a narrower tax base), the less accountable the government is likely to be. Moreover, due to the fact that in oil economies, revenue from taxes are minimal, we can expect that controlling for the impact of various taxes, a greater dependency on oil is likely to create less accountability.

For this second step, we depart from Shah's (2005) specification by controlling for a country's level of development (GDP per capita) and overall policy framework (trade openness ratio). We test whether variables capturing the dependence on various types of taxes as well as oil dependency are significantly associated with accountability. In this second step, we keep the same measure of voice and accountability.

Table 4 gives the results of this second step. We use two measures of oil dependency. In specification 1, we use the share of oil exports in total exports and in the second one, we use the share oil exports in GDP from the World Development Indicators database. In both cases, controlling for development and policy variables, it appears that oil dependency has a negative association with accountability[9]. This confirms what is alluded to in the literature on the resource curse.

But what is striking is that, for countries relying on income taxes of individuals (measured as a share of total taxes), accountability is much higher (controlling for the same variables). By contrast, for countries relying on trade taxes, which can be associated with rents in some countries, accountability is lower (although the coefficient is not strongly significant). It is also worth noting that controlling for all

[9] This is also consistent with findings from Heuty et al. (2009).

these variables, Africa seems to suffer from a certain lack of accountability. That is also precisely why a fiscal contract needs to be established in African countries.

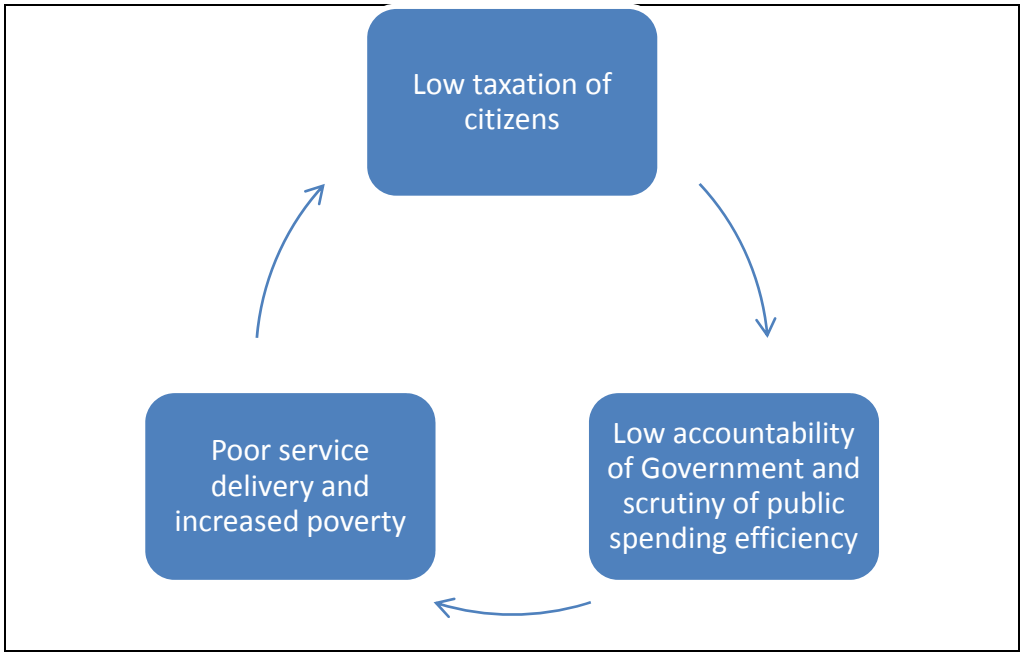
Table 4: The Main Determinants of Accountability

Dependent variable: Voice and accountability				
	(1)		**(2)**	
GDP per capita	0.01		-0.01	
	0.05		*0.03*	
Openness	0.10		**0.36**	**
	0.15		*0.12*	
Trade tax	-0.26		-0.22	
	0.65		*0.40*	
Individual tax	**3.45**	**	**3.33**	**
	0.76		*0.43*	
Oil exports	**-0.65**	*		
	0.37			
Fuel exports			**-1.07**	*
			0.62	
Sub-Saharan Africa	*-0.42*		**-0.58**	**
	0.41		*0.21*	
South Asia	-0.50		**-0.26**	
	0.46		*0.22*	
Middle East and North Africa	0.11		-0.04	
	0.40		*0.21*	
East Asia and Pacific	**-0.76**	*	**-0.68**	**
	0.41		*0.20*	
Europe and Central Asia	0.40		0.23	
	0.36		*0.16*	
Latin America and the Caribbean	0.48		0.36	
	0.45		*0.22*	
Constant	-0.26		-0.32	
	0.69		*0.40*	
# of obs.	78		203	
R^2	0.657		0.611	

(standard deviation shown in italic)

Therefore, a vicious circle operates in most oil-rich economies: citizens are slightly taxed, therefore scrutiny of public spending and government accountability is low, which induces poor service delivery and maintain poverty at high levels, which now prevents taxation of citizens (see Figure 4).

Figure 4: The Vicious Circle of Oil-rich Economies



In this environment, it is relatively easy to conclude that public efficiency is likely to remain low in oil-rich economies. How can such a fiscal contract be achieved in poverty-ridden countries, where tax evasion is so high? How to break the vicious circle? One needs to start by increasing the taxation of individuals. However, in some oil-rich countries, taxation can only happen after having redistributed part of the rent. That is the principle of this proposal, developed in the next section.

4. Oil redistribution schemes: A way of increasing citizens' scrutiny on public spending?

While there have been many oil redistribution schemes proposed, they have not been combined with a fiscal contract. At best, policy makers and researchers advocate for redistributing directly revenues from oil extraction to citizens (proposals from Sala-i-Martin and Subramanian (2003) for Nigeria and Birdsall and Subramanian. (2004) for Iraq), and letting them spend or save it. This is probably related to the fact that in developing countries, tax evasion is likely to be high (Newbery et al. 1987, Bird et al. 2008) and direct taxation is relatively small (OECD 2008). Therefore, higher direct taxation must be put in place *after* a higher redistribution share. But the main strength of oil economies lies in the fact that they benefit from sufficient revenues that they can share a part to citizens.

In the real world, the Alaska Permanent Fund is one of the few examples of oil redistribution schemes (Anderson 2002). Despite strong government effectiveness and good governance, the current redistribution scheme is increasingly coming under criticism. It appears as if there is a growing apathy from the population on public spending scrutiny and gradually, investment in public goods is neglected. Some voices in Alaska are calling for the introduction of new taxes on individuals in order to create a fiscal contract. Some observers of the situation in Alaska seem to believe that without a taxation relationship, the efficiency of public spending deteriorates overtime.

In order to explicitly take account of this relationship, we present some characteristics of another option, which could be called: "citizen funds+": a share of oil revenues would be redistributed annually to any eligible citizen of the

state/country, and from this amount, one part would be taxed to increase public scrutiny and broaden the tax base[10].

We present in Table 5 a comparison among the standard approach (increase public scrutiny by donors and international NGOs), the Alaska model, and our proposal of a "Citizen Fund+"[11].

Table 5: Weaknesses and Shortcomings of Various Schemes of Oil Redistribution Revenues

	Redistribution through public spending/external pressure on spending efficiency	**Citizen Fund (Alaska model)**	**Citizen Fund +**
Vested interest for scrutiny of public spending	Low	High but declining	High
Investment in public goods	Low to medium (infrastructure)	Low to medium (infrastructure)	Medium??
Level of domestic taxation	Low	Very low	Low to medium
Political Feasibility	Relatively easy (if subsidies to population)	Relatively easy	Relatively difficult with governments
Technical Feasibility	Relatively easy	Relatively difficult	Difficult

There are obviously some difficulties in implementing such schemes. Challenges derive from mainly two types of problems: governance and logistics/technical problems.

On the governance side, what is the required level of political will and stability? Lederman et al. (2005) demonstrated empirically that political will and stability have a major impact on corruption and accountability. If a government does not want to implement such redistribution scheme, external pressure is likely to fail,

[10] A major share of oil rents would be saved and for the spending share (based for instance on permanent income hypothesis), one part would be allocated to citizens with a small share taxed.

[11] It is worth noting that the citizens fund ++ model is not exclusive from the current model based on pressure for increased transparency mainly from external pressure.

and this mechanism cannot be seriously implemented. Moreover, any government could strive to siphon some of the redistributed funds. This in line with the critics such as Hjort (2006), who explains that in a low-capacity and corruption-ridden country, there will be even more leakages in the system and corruption. Focusing on Argentina and using a new sub-national democracy index, Gervasoni (2007) demonstrates that intergovernmental revenue-sharing rules that disproportionately favor the less populated (and more overrepresented) districts provide their incumbents with generous "fiscal federalism rents" that allow them to restrict democratic contestation and weaken checks and balances[12].

It is possible that increasing redistribution schemes, most probably through sub-national institutions, would reduce accountability, but that is where the taxation element can play a role—to curb the apathy tendency of citizens when oil revenues are distributed. Moreover, Shah (2005) has demonstrated that accountability may be higher when fiscal decentralization is increased.

The feasibility and complexity of such schemes need to be addressed. But aside from Norway, no large oil-rich economy has been successful in achieving efficient public spending, despite external pressure for more transparency.

On the logistical/technical side, it is obvious that many questions need to be answered[13] such as the existing capacity of revenue administration and the tax culture in a country or which taxing instruments (e.g., direct personal income tax, property taxes or some types of indirect taxes, such as the VAT, and user fees) need to be selected[14]? Should redistributed resources be taxed directly or indirectly or should there be a user fee for public goods? Who should be eligible for these schemes? Would there be any discriminatory criteria? And finally, on the logistical side, what is

[12] Ross (2007) also explains that this would not address regional grievances, since those who live closer to the mineral's source would continue to ask for a larger share of revenues, which can not be satisfied.
[13] We leave aside the question of what should be the share to redistribute since it is essentially an issue of consensus to reach between elites and informed citizens.
[14] From a political economy perspective, three elements need to be satisfied: ensuring transparency; building in functional mechanisms to overcome institutional constraints; and building consensus around oil revenue management.

the required capacity threshold for local tax administration[15]? How is it possible to reach citizens in remote regions?

5. Concluding remarks and areas for future research

This paper demonstrates that without shaping a fiscal social contract through taxation of citizens in oil-rich economies, the outcome of public spending will probably remain low despite increased external pressure for transparency. The line of argument is straightforward: citizens are more likely to hold their governments accountable when they have to pay more taxes; and as a result, the governments have incentives to design and implement policies that improve the welfare of the population. (See, for example, More 2004.) However, in a poverty-ridden country, without prior redistribution of a small share to citizens, taxation is likely to remain impossible.

Some pilot initiatives should probably be undertaken first before expanding them to more countries or regions. Despite its complexity, this experiment should probably be launched because after decades of external pressure, it is probably time to acknowledge that donors' pressure in these countries is not as efficient as expected. Most citizens in oil-rich economies do not have any link with their government. Even though not perfect (especially at the beginning), this experiment should create a link between citizens in some SSA countries and their government.

This proposal is not easy to implement but, in the field of oil-rich economies, there is not any initiative, such as EITI (Extractive Industries and Transparency Initiative) or the National Resource Charter[16], which is easy to implement and they all depend on elites' willingness to adhere to the process.

However, one of the most important advantages of this proposal (overt the other initiatives) would be to be aligned with some politicians' incentives. Indeed, this

[15] This is a concern raised by Ross (2007) regarding citizens funds. He points out that these schemes are complex to administer.
[16] http://www.naturalresourcecharter.org/.

proposal could, in the short term, benefit a politician since citizens will have their incomes raised by the redistribution part (and could then be grateful to them for this influx of incomes).

In order to address the pertinent questions related to this proposal, country case studies could be undertaken to test the feasibility of redistributive and tax mechanisms as presented. The recent discovery of oil reserves in some African countries opens up new opportunities as well as challenges for public engagement, public discussion and donor support to intervention in institutional arrangements for the entire value chain, including resource collection and management.

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Annex 1: Variables definition and sources

Control variables

- **Urban population**. Urban population is the midyear population of areas defined as urban in each country and reported to the United Nations. United Nations, World Urbanization Prospects. Source: World Bank WDI.
- **GDP per capita**. GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2005 international dollars. World Bank, International Comparison Program database. Variable in logarithms. Source: World Bank WDI.
- **Openness**. Imports of goods and services (BoP, current US$) plus exports of goods and services (BoP, current US$) as a share of GDPGDP (current US$). Source: World Bank. WDI.

Education variables:

- **Gross secondary education enrollment ratio**. School enrollment, secondary (% gross). Break in series between 1997 and 1998 due to due to change from International Standard Classification of Education (ISCED76) to ISCED97. Recent data are provisional. Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Source: World Bank WDI.
- **Public secondary education spending**. Share of public expenditure for secondary education is the percentage of public education expenditure for secondary education. Public expenditure (current and capital) includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private's entities). United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics. Source: World Bank WDI.
- **Secondary pupil teacher ratio**. Break in series between 1997 and 1998 due to due to change from International Standard Classification of Education

(ISCED76) to ISCED97. Recent data are provisional. Secondary school pupil-teacher ratio is the number of pupils enrolled in secondary school divided by the number of secondary school teachers (regardless of their teaching assignment). United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics. Source: World Bank WDI.

Governance indicators:

- **Government effectiveness**. Measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (estimate). Source: Kaufman governance indicators.
- **Control of corruption**. Measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests In brief our methodology (estimate). Source: Kaufman governance indicators.
- **Voice and accountability**. Measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media (estimate). Source: Kaufman governance indicators.
- **Corruption perception index**. Corruption perception index (1995-2006). Source: http://www.transparency.org/policy_research/surveys_indices/cpi/2008

Government Investment

- **General Government final Consumption Expenditure per Capita.** General Government final Consumption Expenditure per Capita (current US$) (average 2002-2006). Source: World Bank. WDI.

Taxes:

- **Trade tax**. Import tax, export tax plus other trade duties (as a share of total tax revenue). Source: IMF IFS.
- **Individual tax**. (as a share of total tax revenue). Source: IMF IFS.

Oil export measures and reserves:

- **Crude oil exports**. Crude oil exports (number of thousand barrels per day) (2005). Source: Energy Information Administration, International Energy Annual 2006, table posted December 8, 2008.
- **Oil exports**. Exports (mineral fuels, oils, distillation products, etc.) as a share of total exports (2006).
  Source: http://www.intracen.org/appli1/TradeCom/TP_EP_IC.aspx?IN=27&YR=2006

&IL=27%20%20Mineral%20fuels,%20oils,%20distillation%20products,%20etc

- **Fuel export**. Fuel exports (as a percentage of merchandise exports) times merchandise exports (current US$) over GDP (current US$). Source: World Bank WDI.
- **Crude oil reserves**. Crude oil proved reserves (number of billions of barrels) (2008). Source: Energy Information Administration, International Energy Annual 2006, table posted December 8, 2008.

Energy Efficiency:

- **Energy Efficiency.** GDP per unit of energy use (PPP$ per kilo of oil equivalent) (average 2002-2006). Source: World Bank. WDI.