An economic Manifesto for the oil exporting countries of the Persian Gulf *

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1. Introduction

The Middle East and North Africa region has had about the worst economic performance of any region of the world since 1975; only sub-Saharan Africa experienced lower growth than the Middle East during this period. What is more surprising is that this sub-par performance is also true for the group of major oil (and gas) exporting countries in this region that have enjoyed significant oil and gas revenues.[1] All of the major oil exporters of the Persian Gulf experienced negative per capita annual growth from 1975 to 2002, despite their significant oil and gas revenues: Iran (–0.4%), Kuwait (–1.2%), Saudi Arabia (–2.5%) and the United Arab Emirates (–2.8%). While the considerable rise in

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[1] Higher oil prices since the toppling of Saddam Hussein from power has improved macroeconomic performance statistics. This, however, cannot be classified as a sustained economic success story.

oil prices since 2003 has undoubtedly generated economic growth and increased GDP and GDP per capita (in some cases, even reversing the negative trend) since the period discussed above, the direct connection of this growth to oil revenues clearly underscores the continuous dependence of these countries on oil.[2]

We estimate that the major oil exporting countries of the Persian Gulf – Iran, Iraq, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates (UAE) – (hereinafter collectively referred to as the OECPG) have received about $ 5 trillion (in 2006 dollars) in oil/gas revenues from 1975 through 2005. So, where did all the oil revenues go and why did they not adopt better economic policies and institutions to enhance growth? There is a short answer. A number of these countries are run like a family business and for the benefit and survival of the family; the ruling elites in these oil exporting countries have in the past, and stand in the future, to gain the lion's share of all benefits of oil. Economic policies and institutions have been opaque and ineffective, with the goal of supporting those in power.

We provide a radical way to manage oil wealth in order to break the vicious cycle of economic and social failure. We firmly believe that the adoption of such an approach in managing oil wealth is the only way that these countries can address their economic failures. In section 2 we briefly look at the economic implications of oil depletion, the economic management problems presented by oil depletion and significant oil revenues, and issues of intergenerational equity. In section 3 we propose our approach to the public management of oil resources to cut the level of revenues available to governments from oil to zero while incorporating a formal "Oil Fund for All Generations"; we note that others have proposed and implemented oil funds but in our proposal the government would (in time) lose all access to oil revenues. In section 4 the formulation, as well as the assumptions of the Oil Fund, are laid out and we provide indicative numbers of the financial implication for the average citizen in these countries. In section 5 we discuss some of the anticipated implementation issues that need to be considered to institute such an Oil Fund. In section 6 we present our conclusions.

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[2] For details see Askari and Taghavi (2006) and also Askari (2006).

2. Oil depletion, economic management and intergenerational equity

In an oil-based economy, if the income from oil is consumed (and, as is the practice, if oil output is counted as a part of net national product – heareafter NNP), then NNP declines as oil reserves are depleted. So at least a part of current oil revenues must be saved and invested, domestically or abroad, to even out NNP and thus to avoid a decline in national output in the future.[3] Put differently, the normally or conventionally measured NNP in an oil producing country diverges from the 'theoretically correct' measure of NNP for a country that has no depleting resource such as oil. The higher the return on investments, that is, the more compensation made for resource depletion, and the longer the resource will last at the current rate of extraction, the closer (more comparable) are the conventionally measured and theoretically correct NNP.

In the case of the 'normal' developing country (one that does not rely heavily on exhaustible resource extraction), economists generally believe that a government should nurture institutions and adopt policies that promote private sector growth. The essential institutions include: legal and judiciary, tax collection, an entity to provide a minimal social safety net, government expenditure control and promotion of competitive factor and product markets. To be effective, these essential government activities must be largely free of corruption and they must treat all citizens the same; they must uphold all property rights, enforce all contracts, enforce tax collection according to the law and spend government revenues as stipulated. Countries need flexible labor markets with laws that encourage employment. Another indispensable element for growth are competitive financial markets that provide appropriate incentives and security for savings and channel resources to the most productive investments.

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[3] The conceptual interpretation of NNP in an economy is that it represents the highest level of sustainable consumption. In the development of the conceptual framework of national income accounting, extractive industries were treated as any other source of national product. As a result, the value of the extracted resource was added to national product at the point of extraction. This method of valuing the contribution of extractive industries, as is now widely recognized, is ill conceived and results in significant distortions. For the derivation of the required rate of savings see Appendix I in Askari (1990) and for a calculation of the savings rate for individual oil exporting countries see Askari, Nowshirvani and Jaber (1997).

Governments play an important role in the provision of education. A highly educated labor force is almost a precondition for growth in today's global economy. Adequate healthcare for all is an important input for an efficient labor force and something that can be provided in a public-private partnership. The government should adopt tax policies to raise revenues efficiently and fairly. The government should provide, or ensure that the private sector provides, the basic infrastructure for a modern economy – roads, power and communication.

More recently, economists agree that reform for reform's sake will not necessarily enhance growth.[4] But the above are broad prescriptions that must be *adapted* to a particular country's conditions. Policy formulation and application to a particular country is more of an art than a mechanical proposition. The sequencing of reforms should endeavor to remove the binding constraint to a country's growth.

How does significant oil reserves, or for that matter any other exhaustible resources, change these policies? We have mentioned the imperative of higher than normal savings and investment to compensate for future declines in revenue as oil is depleted and the need for reducing the overbearing role of the public sector to encourage private sector growth. But there is more. The major oil exporting countries must diversify their sources of economic output away from oil by encouraging export diversification, to stabilize government revenues and diversify the government's sources of revenues away from oil, and to protect intergenerational equity in the depletion of oil resources.

Export diversification requires sound exchange rate policies, limited production (not input) subsidies, access to foreign markets and the other supportive policies. In the case of exchange rate policies, oil exporters face a particular problem, namely, the undesirable appreciation of their real exchange rate (commonly known as the Dutch Disease in the economics literature), which in turn discourages the development of a diversified and competitive export base.[5] Governments can count-

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[4] For an excellent summary of the recent evolution of how economists view the prescription for growth, see the various articles in International Monetary Fund (2006).

[5] The reason is that the inflow of oil revenues tends to increase the price of non-tradeables, for example, goods such as housing, services and the like, relative to the price of tradeable goods, because non-tradeables cannot be readily imported. Thus in-

er such a real exchange rate appreciation by reducing government expenditures, giving production subsidies to favor tradeables and thus exports, or an appropriate combination of the two.[6] Others argue that there are more fundamental problems than the Dutch Disease that mitigate the development of a vibrant private and export sector. Some make the case that oil is so overbearing that entrepreneurial activity is trumped.[7] Given the magnitude of oil wealth, entrepreneurs find it more profitable to devote their energies to get a drop of the oil wealth as opposed to creating new non-oil wealth. Some economists argue that because volatility has been shown to be counterproductive towards growth and oil revenues are volatile, then oil hampers private sector growth and diversification.[8] Still others argue that a large oil sector promotes specialization in non-tradeables not because of the traditional Dutch Disease but because of the impact of financial market imperfections on specialization.[9]

While production and export diversification away from oil are necessary, so is government revenue stabilization and diversification. In most of the OECPG oil (gas) provides the lion's share of revenues and it has fluctuated considerably from year to year. Relatively stable fiscal revenues are essential for macroeconomic management and in turn for sustained economic growth. Countries that achieve sustained long-term growth on average experienced less volatility in growth.[10] To stabilize oil revenues, countries can, and have, adopted some form of an oil stabilization fund. A portion of revenues are placed into the fund in a year of above a calculated average (moving or otherwise) expected oil revenues/prices and can be 'theoretically' drawn down when revenues/prices fall below the average. Alternatively an oil-exporting country could hedge its exposure to oil price volatility through the futures market. While such funds and hedging may be used to stabilize available oil revenues from year to year, they do not

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dividuals and companies are given the incentive to produce these non-tradeables to the detriment of exports.

   [6] Input subsidies, such as subsidized fuels, electricity and water, must be avoided as they encourage over-use and waste of the subsidized resource. Output subsidies do not encourage waste of inputs and a sub-optimal mix of inputs because of artificially low prices of selected inputs.

   [7] See Hausmann and Rigobon (2003).

   [8] *Ibid.*

   [9] This is the central theme of Hausmann and Rigobon (2003).

   [10] Zagha, Nankani and Indermit (2006, p. 8).

diversify the basic source of government revenues.[11] Government revenue diversification ultimately requires a healthy and growing economy with an effective income tax system.

The issue of equity and social justice is another important consideration for countries with large oil and gas resources. Economists have addressed the issue before. Robert Solow in his famous article (1974, p. 41) concluded by saying:

> "The finite pool of resources (I have excluded full recycling) should be used up optimally according to the general rules that govern the optimal use of reproducible assets. In particular, earlier generations are entitled to draw down the pool (optimally, of course!) so long as they add (optimally, of course!) to the stock of reproducible capital".

What if they cannot, or will not, optimally add to the stock of reproducible capital? The clear need is to find an alternative to Solow's prescribed optimal draw down and optimal addition to reproducible capital; this can be achieved by taking oil revenues away from the government and creating a fund to address issues of equity.

For any proposition regarding the management of exhaustible resources to be effective in these six countries, it must be compatible with basic Islamic teachings on the ownership and extraction of depletable resources.[12] When it comes to depletable resources, Islam is unambiguous. Anything under ground belongs to society at large; that is, all citizens should have an equal share in what is under the land; this incorporates both *current* and *all future* generations. Thus Solow's prescription is essentially that which should be followed in these countries.

The task for these governments is clear but difficult. First, governments must take control of all minerals. Second, governments must make sure that they do not waste depleting mineral resources, because they are the birthright of all citizens and must be used productively. Third, as minerals are depleted, governments must make sure that they use their revenues in such a way that all citizens today and for all future time receive similar real benefits. Oil should benefit all members of the current generation equally (with optimal depletion and optimal

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[11] The exception are countries that are so rich that they can invest a large portion of current oil revenues in diversified assets (abroad) to give the government all the revenues it needs in the future without having to resort to taxation.

[12] Again for more details on Islamic economic principles, see Askari and Taghavi (2005).

compensation for depletion), with the implication of relatively even distribution of income given the overwhelming role of oil (as opposed to hard work and sound productive investments) in these economies.

Many countries and states (within countries) have adopted funds for future generations. These funds generally take but a *small* percentage of revenues of exhaustible resource depletion; their operations are generally opaque; and in some cases there are no rules for the portion to be saved, in cases where there are rules, the rules for the portion to be saved, its management and/or its distribution are highly imprecise. These funds do not follow Solow's prescription of intergenerational equity, as they do not replace all of the drawn down resource with future sources of output. In a number of the OECPG ruling families or the elite takes a significant portion of the revenues even *before* it becomes available for public expenditures or for placement in any sort of a fund, whether the fund be for revenue stabilization or for future generations.[13]

The *de-linking* of oil revenues from government coffers may avoid other problems normally associated with the exploitation of depletable natural resources, such as high level of military expenditures.[14] Military expenditures, in turn, could be associated with a number of other adverse developments. Civil wars and conflict are more likely if military expenditures are high; and the risk of civil war is higher if natural resource endowment is double the average.[15] Civil wars in turn lead to higher military expenditures, capital flight, loss of social capital, slower economic growth and more poverty and refugees, an almost impenetrable vicious circle. While some advocate an "international template for the acceptable governance of natural resource revenues to which a government with significant revenues could choose to subscribe",[16] we believe that a fund that takes all revenues away from the government should be an integral and primary component of any template.

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[13] For a review and discussion of the operation of many of these funds (stabilization and future generations) in Alberta, Algeria, Alaska, Chile, Iran, Kuwait, Kirbati, Norway, Oman, Papua New Guinea and Venezuela, see Davis *et al.* (2003), Skancke (2003) and Wakeman-Linn, Mathieu and van Selm (2003).

[14] For more details on military expenditures and arms imports, see Askari and Taghavi (2006).

[15] See Collier *et al.* (2003).

[16] *Ibid.* (p. 182) for a five-point template.

Since equity is one of our central preoccupations, we should say a little more about it before we proceed to our proposal. In terms of income distribution, it is evident that the majority of people in the OECPG have not benefited from the massive inflow of oil revenues. The 2002 United Nations *Human Development Report* verifies the growth of inequality. In Iran, the value of the Gini coefficient was 0.443 in the mid-1980s and 0.430 in 1998.[17] In Iraq, the value of the Gini coefficient increased from 0.370 in 1993 to 0.508 in 1998. As shown in the Table 1, the Gini coefficients of the Middle East and North Africa regions, with the exception of Sub-Saharan African region, lags consistently behind those of the comparator groups.

TABLE 1

DECADAL MEDIANS OF GINI COEFFICIENTS FOR THE INCOME DISTRIBUTION

	1960s	1970s	1980s	1990s
Middle East and North Africa	0.419	0.436	0.408	0.397
Sub-Saharan Africa	0.499	0.485	0.396	0.423
East Asia and Pacific	0.346	0.344	0.344	0.348
South Asia	0.317	0.323	0.322	0.316
OECD and high income	0.329	0.330	0.322	0.316

Source: Deininger and Squire (1998).

3. The case for an oil fund for future generations

The current system has failed and the poor economic performance of the OECPG and their income distribution provides plain testimony and justification for change. The majority of the people in these countries have suffered the devastation brought on by ongoing sub-par economic performance, warfare and poverty. So what can be done to prevent further waste of these nations' wealth? Can future oil revenue be used to benefit all citizens?

We think the answer is "yes" if we establish an Oil Fund for All Generations (OFAG) in each of the OECPG. Future oil revenues

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[17] The coefficient ranges from 0 to 1, 0 representing perfect equality and 1 total inequality.

from each country will be deposited in the respective OFAG and each OFAG will be professionally managed by an independent entity accountable to the citizens of the country. Every citizen, both current and future, will receive a fixed-valued check as an annuity from the OFAG. Limited government borrowings from the OFAG could be permitted but such borrowings must be repaid to the OFAG; and a reasonable transition period (for taking all oil revenues away from governments) should be considered. It would be naïve to think that the establishment of an OFAG in the OECPG is the 'silver bullet' solution. The complex economic and social problems of these countries cannot be solved by a single move (and with one-size-fits-all). OFAG would at least *begin* to address the root cause of decades of waste, minimize corruptions and hopefully steer the region in a productive direction. Each nation will run into different economic and social problems but at least because of such a fund few citizens, if any, will live in poverty.

There are other proposals for state-run Intergenerational Equity Funds,[18] with the theoretical basis provided by the Solow paper. Some countries set up separate funds to address the two main issues that arise from the depletion of exhaustible natural resources: uncertainty of revenues (and thus, difficulty in budgetary planning) and intergeneration equity. To address these issues some funds were established with the objective to reduce the volatility of natural resource revenue income (the 'Stabilization Fund') while others have, as an objective, the saving of current natural resource revenue for the benefit of future generations (the 'Savings Fund'). Some oil-rich countries would adopt 'Stabilization Fund' to absorb potential shocks from sudden increase or decrease in oil prices (and thus, revenue); excess oil revenues would be funneled to the Stabilization Fund when oil revenue is high and the fund would finance the budget shortfall when oil revenue runs low. The 'Savings Fund' on the other hand receives a constant share of oil revenues over time. The fund will be saved for future generations so that when oil is exhausted, future generations will receive the same benefit as current generation. We provide a few selected examples:

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[18] For an excellent detailed summary see Davis *et al.* (2003).

Norway – The State Petroleum Fund (SPF) was established in 1990 to preserve national wealth from oil production and finance the overall budget. All of net income from oil flows into the SPF, from which an annual transfer is made to the treasury to meet the non-oil deficit in the budget. The fund is effectively a government account, set to provide a long-term framework for the annual process of settling the non-oil budget deficit. The fund does not directly deal with the issues of the volatile oil prices, as they are dealt with in the context of the standard budgetary process. SPF will in part also benefit future generations.

Alaska – The Alaska Permanent Fund (APF) is a state institution. APF deposits 25% of oil and gas royalty revenues into a savings fund regardless of oil market developments. The principal of the fund is invested in perpetuity thereby transforming exhaustible natural resource into a renewable source for future generations. Annually, the principal of the fund is first replenished for inflation. Then annual distributions are made to every resident of Alaska (one year qualification), no matter what age (for minors the payment is made to the parents or guardian). As of April 6, 2006, the current market value of the well-diversified fund stood at $ 34.6 billion.

Chile – The Chile Copper Stabilization Fund (CSF) was created in 1985, following a sustained increase in the international copper price. The accumulation and withdrawal rules were based on a reference copper price determined annually by the authorities. The CSF was dissolved in 2002 due to significant withdrawals that began in 1998 with the sharp downturn in copper prices. However, the fund proved to be a great buffer to the expenditure pressures during the upswings of late 1980s and mid-1990s.

Kuwait – The Kuwait Reserve Fund for Future Generations was established in 1976 with the objective of saving in order to provide for the future generations with the depletion of resources. The fund receives 10% of total government revenue, accumulating along with the investment returns on its assets. While the fund has no precise or established rules for withdrawals, the financing of the reconstruction of Kuwait after the First Gulf War, approved by the national assembly, was a major beneficiary.

Oman – The Oman State General Reserve Fund was founded in 1980 with the objective of saving for future generations, receiving 15% of oil revenues. However, since its inception, the fund has become a 'Contingent Fund' with the government using its discretion to withdraw from the fund to provide for budgetary deficits. Such arrangements allow for accumulation of revenues only when oil revenues exceed the budget deficit.

4. An Oil Fund for All Generations

Suppose there is 'no' oil, then the government would develop economic policies with no oil revenues. Essentially, taking oil revenues away from governments would be a 'forcing mechanism' to adopt and implement development policies just like other countries without oil would do, and many have done so very successfully. For our Oil Fund for All Generations (OFAG or the 'Fund'), 100% of the oil revenue will be placed into the Fund and proceeds will be distributed to all eligible citizens in the form of an annual payout that maintains the same real purchasing power. The detailed derivation of the payout is described as follows.

Let us assume that the Fund, F, were established and proceeds from the Fund were distributed to every citizen immediately (starting at time 0). The inflow to the Fund would be current oil revenue and the outflow from the Fund would be an annuity payout to every citizen in the country. There would be a positive balance in the Fund if there were more oil revenues than the total payout in the first year. Therefore, the Fund at the end of the first period, F_0, would be:

$$F_0 = R_0 - Y_0 = R_0 - P_0 Z, \tag{1}$$

where F_0: oil fund at time 0; R_0: oil revenue at time 0; Y_0: total annual payout to citizens at time 0; P_0: population at time 0; Z: real annual payout per citizen, assumed constant over time.

At the end of the first year the size of the Fund, F_1, would be the oil revenues minus the payout to citizens plus the balance carried over from previous year (year 0), if any, grown by appropriate reinvestment rate i. Therefore, we can write F_1 as:

$$F_1 = R_1 - Y_1 + F_0 e^i. \qquad (2)$$

Alternatively, equation 2 can be rewritten as:

$$F_1 = R_0 e^r - P_0 e^g Z + (R_0 - P_0 Z) e^i, \qquad (3)$$

where i: annual real return on fund investments, assumed a constant; g: annual population growth rate, assumed a constant; r: annual real growth rate in oil revenues, assumed a constant.

In year two, the year-end balance of the Fund would be oil revenues from year two minus payout to citizen plus any residual balance from previous two years. Therefore, the Fund in year two or F_2 would be:

$$F_2 = R_2 - Y_2 + F_1 e^i. \qquad (4)$$

Equation 4 can be rewritten as:

$$F_2 = R_0 e^{2r} - P_0 e^{2g} Z + (R_0 e^r - P_0 e^g Z) e^i + (R_0 - P_0 Z) e^{2i}. \qquad (5)$$

Accordingly, the Fund in any given year n would be a summation of i) oil revenues from year n or $R_0 e^{nr}$, ii) minus the payout to the citizens, $P_0 e^{ng} Z$, and iii) accumulation of reinvested Fund resources from previous years:

$$R_0 \sum_{k=0}^{n-1} e^{kr} e^{(n-k)i} - \sum_{k=0}^{n-1} P_0 e^{kg} e^{(n-k)i}$$

In other words F_n can be expressed as:

$$F_n = R_0 e^{nr} - P_0 e^{ng} Z + R_0 \sum_{k=0}^{n-1} e^{kr} e^{(n-k)i} - \sum_{k=0}^{n-1} P_0 e^{kg} e^{(n-k)i} Z. \qquad (6)$$

When there is no inflow of oil revenues, oil reserve is depleted, the payout Z will simply be made from the accumulated balance from previous years. We can derive Z by rearranging equation 6:

$$Z \leq \frac{R_0}{P_0} \left[\frac{e^{nr} + \sum_{k=0}^{n-1} e^{kr} e^{(n-k)i}}{e^{ng} + \sum_{k=0}^{n-1} e^{kg} e^{(n-k)i}} \right] \Rightarrow Z \leq \frac{R_0}{P_0} \left[\frac{\sum_{k=0}^{n} e^{kr} e^{(n-k)i}}{\sum_{k=0}^{n} e^{kg} e^{(n-k)i}} \right], \qquad (7)$$

where $F_n > 0$.

It can be shown that equation 7 can be simplified using geometric algebra as follows:

$$\sum_{k=0}^{n-1} e^{kc} e^{(n-k)i} = e^{ni}\left[\frac{1-e^{(c-i)n}}{1-e^{(c-i)}}\right], \tag{8}$$

where c is a constant.

Using 8, and substituting c for r and g, respectively, equation 7 becomes:

$$Z \le \frac{R_0}{P_0}\left\{\frac{e^{ni}\left[\dfrac{1-e^{(r-i)n+1}}{1-e^{(r-i)}}\right]}{e^{ni}\left[\dfrac{1-e^{(g-i)n+1}}{1-e^{(g-i)}}\right]}\right\}.$$

Equivalently,

$$Z \le \frac{R_0}{P_0}\left[\frac{1-e^{(r-i)n+1}}{1-e^{(g-i)n+1}}\right]\left[\frac{1-e^{(g-i)}}{1-e^{(r-i)}}\right]. \tag{9}$$

Finally, as n approaches infinity $(n \to \infty)$, Z becomes:

$$Z \le \frac{R_0}{P_0}\left[\frac{1-e^{(g-i)}}{1-e^{(r-i)}}\right], \tag{10}$$

where $r < i$ and $g < i$.

Two assumptions are made regarding the relationships between g, r and i in deriving equation 10. First, we assumed r is less than i. In equilibrium one could assume that the long-term growth rate of oil revenues, r, would be equal to the long-term reinvestment rate, i. However, we know that the output of oil, and thus oil revenues, will eventually decline to zero. Hence, in the long run we expect oil revenue growth to be somewhere between zero and the long-term reinvestment rate, i. Second, g is assumed to be 2% and less than i. This assumption is reasonable because the historical long-term average growth rate of mankind has been in the 2% range.[19]

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[19] There were exceptions to this observation. For a particular country, the population growth for a certain period of time may exceed (or indeed, be negative) this long-term growth rate. For example, it is not uncommon for population growth to be abnormally high immediately during the post-war periods (e.g. the U.S. 'baby boom' after World War II).

Given the assumptions above, what does equation 10 mean for the OECPG? In other words, if every country in the OECPG group were to establish the Fund, what would each country's per capita constant real payout look like? To illustrate a range of possible per capita payout, Z, for each of the OECPG, we present country-specific tables for different levels of r and g. In the calculations, as a proxy for the current period's oil revenues, R_o, we take the product of: a) the simple average of the past five years of total oil output (this includes oil that was exported and that was retained for domestic consumption) for each country [20] and b) the simple average of the past five years of oil prices. The average reinvestment rate i is assumed to be 8% per annum based on the weighted average of 30-year US Treasury Yield and S&P 500 Index Yield over the past 25 years, assuming 75% and 25% allocation to bonds and stocks, respectively, and that rate is used for all six countries, with sensitivity analysis around this average figure. Also, as a proxy for the current population, P_o, we propose that a payout from the Fund is only made to citizens who are age 18 years and over.[21] In addition to these assumptions, we made further estimations for the purpose of calculation as follows: i) population is adjusted in order to account for 'indigenous nationals' only; ii) per capita GDP (PPP) for Iraq is based on authors' estimate; iii) in calculating 2-year oil revenue, output of Iraq between 2003 and 2004 were adjusted to account for production disruption due to warfare. Tables 2 through 7 show a range of potential payouts to each citizen (Z calculated using equation 10 above) and citizen payout as a percentage of conventionally calculated GDP per capita (i.e., GDP divided by total population and not citizens, or citizens over eighteen), depending on the combination of the oil revenue growth assumption (r) and the reinvestment rate assumption (i).

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[20] Oil output and price used here are from the BP (2005).

[21] In section 5 we discuss the details of eligibility. For the purpose of calculation, however, age 15 years and over was used due to data availability.

TABLE 2

IRAN'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	713	868	1,110	1,546	2,564
	10%	12%	16%	22%	37%
i = 7%	755	887	1,079	1,381	1,923
	11%	13%	15%	20%	27%
i = 8%	785	901	1,060	1,289	1,649
	11%	13%	15%	18%	24%
i = 9%	808	911	1,046	1,230	1,496
	12%	13%	15%	18%	21%
i = 10%	826	919	1,036	1,190	1,399
	12%	13%	15%	17%	20%

Note: Used 2003 population of 68.2 million with 3% non-citizen, from UNDP (2005) and authors' estimate, respectively.

TABLE 3

IRAQ'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	1,559	1,896	2,425	3,379	5,603
	46%	56%	71%	99%	165%
i = 7%	1,649	1,939	2,358	3,017	4,203
	48%	57%	69%	89%	124%
i = 8%	1,715	1,969	2,315	2,816	3,602
	50%	58%	68%	83%	106%
i = 9%	1,765	1,991	2,286	2,688	3,269
	52%	59%	67%	79%	96%
i = 10%	1,805	2,007	2,264	2,599	3,057
	53%	59%	67%	76%	90%

Note: Assumed population of 25 million, authors' estimate. Oil revenue of 2003 and 2004 was doubled to take account of production disruption due to wars.

TABLE 4

KUWAIT'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	32,788	39,876	51,016	71,067	117,857
	182%	221%	283%	394%	653%
i = 7%	34,679	40,782	49,599	63,454	88,394
	192%	226%	275%	352%	490%
i = 8%	36,066	41,410	48,697	59,224	75,768
	200%	229%	270%	328%	420%
i = 9%	37,126	41,870	48,073	56,533	68,754
	206%	232%	266%	313%	381%
i = 10%	37,963	42,221	47,615	54,670	64,291
	210%	234%	264%	303%	356%

Note: Assumed population of 2.5 million with 70% non-citizen from UNDP (2005) and authors' estimate, respectively.

TABLE 5

QATAR'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	56,957	69,270	88,620	123,452	204,730
	287%	349%	447%	622%	1032%
i = 7%	60,242	70,844	86,158	110,226	153,551
	304%	357%	434%	555%	774%
i = 8%	62,651	71,933	84,592	102,879	131,618
	316%	362%	426%	518%	663%
i = 9%	64,493	72,732	83,508	98,204	119,434
	325%	367%	421%	495%	602%
i = 10%	65,947	73,343	82,713	94,968	111,680
	332%	370%	417%	479%	563%

Note: Assumed population of 700,000 with 75% non-citizen from UNDP (2005) and authors' estimate, respectively.

TABLE 6

SAUDI ARABIA'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	9,127	11,100	14,201	19,782	32,807
	46%	56%	72%	100%	165%
i = 7%	9,653	11,352	13,806	17,663	24,606
	49%	57%	70%	89%	124%
i = 8%	10,039	11,527	13,555	16,486	21,091
	51%	58%	68%	83%	106%
i = 9%	10,335	11,655	13,382	15,737	19,138
	52%	59%	67%	79%	96%
i = 10%	10,568	11,753	13,254	15,218	17,896
	53%	59%	67%	77%	90%

Note: Assumed population of 23.2 million with 35% non-citizen from UNDP (2005) and authors' estimate, respectively.

TABLE 7

THE UAE'S ANNUAL PER CAPITA PAYOUT TO CITIZENS
(in US$ and as a % of per capita GDP)

	r = 0.5%	r = 1.5%	r = 2.5%	r = 3.5%	r = 4.5%
i = 6%	35,410	43,065	55,094	76,749	127,280
	158%	192%	246%	342%	568%
i = 7%	37,452	44,043	53,564	68,527	95,462
	167%	196%	239%	306%	426%
i = 8%	38,950	44,720	52,591	63,959	81,826
	174%	199%	235%	285%	365%
i = 9%	40,095	45,217	51,916	61,053	74,251
	179%	202%	232%	272%	331%
i = 10%	40,999	45,597	51,422	59,041	69,431
	183%	203%	229%	263%	310%

Note: Assumed population of 4 million with 78% non-citizen from UNDP (2005) and authors' estimate, respectively.

A number of assumptions and facts should be repeated before discussing these results. The calculation of Z is based on citizens over eighteen. In four of these countries, Saudi Arabia and especially in Kuwait, Qatar and the UAE, the percentage of non-citizens is extraordinarily high. Thus oil revenues and GDP per *citizen* are much higher than when the denominator is total population; this effect is magnified further when adult citizens is used. For the same reason, the payout as a percentage of conventional GDP per capita (the number reported in the tables) is significantly higher than the payout as a percentage of GDP per citizen. We should also repeat the obvious fact that the calculated Z is the payout today. If a moving average is used to re-calculate Z every year, next year if figures for oil revenues, rate of return on investments or population projections change, then Z will change.[22]

Broadly speaking the absolute payout figures and as a percentage of GDP per capita are very impressive and could make a tremendous difference in the lives of the average citizen. But there are significant variations between the six countries. Based on our results, the six countries fall more or less into three categories: *i*) Iran, *ii*) Iraq and Saudi Arabia and *iii*) Kuwait, Qatar and the UAE.

Iran has the lowest payout figures. In the case of Iran, the payout ranges from 10 to nearly 40% of GDP per capita. Iran's population is large (more than the other five countries combined while Iran's ex-patriot population is relatively small) and its oil output is less than twice Kuwait's or the UAE's. Iran's payout potential could improve dramatically (*more than double* over a decade) if it begins to exploit more aggressively its natural gas resources, as has Qatar.

Iraq is a unique case. It is a country that has gone back to the 1950s and is essentially starting all over again. It appears poorer than Iran because it has little in the way of modern infrastructure but it is likely to be richer than Iran in terms of per capita endowment of oil. In our opinion, the payout figures in our table for Iraq are an underestimate if Iraq can move towards peace and improved governance. Iraq could approach the category of a Saudi Arabia in terms of oil revenues per capita and can learn from the economic policy mistakes of Iran and Saudi Arabia.

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[22] We have assumed that the Fund can borrow (depending on projected oil revenue growth) at the same rate as the investment rate (*i*).

For Saudi Arabia, the payout potential is significantly higher than that of Iran or even Iraq (given Iraq's current status and Iran's slow exploitation of its natural gas resources). The annual payout in Saudi Arabia would dramatically improve the lives of citizens, as the Saudi government has not delivered on economic growth and widespread prosperity. At the same time the OFAG would provide a better guarantee of economic benefits to future generations.

Kuwait, Qatar and the UAE are in another league. Simply said, they are rich beyond belief. Their annual payouts, even under the most conservative assumptions, are just astonishing. Our calculations do not include their existing investments (in a fund for future) abroad. In the case of the UAE the numbers are simply staggering. We estimate that UAE investments abroad are well over $ 450 billion. Most of these funds do not belong to the entire UAE, but belong only to the Emirate of Abu Dhabi. We estimate that Abu Dhabi's investments abroad is over $ 400 billion. The entire citizenry (of all ages, not just over 18) of Abu Dhabi is about 250,000. They are *all* effectively millionaires based on their existing foreign investments alone! Moreover in our payout table for the UAE, if the emirate of Abu Dhabi were taken by itself, the payout figure would be three times that of the UAE as a whole. If the income from existing investments were added to current (and projected) oil revenues (the basis of our payout tables), then the annual payouts for the UAE would increase significantly from those shown in our tables; and for Abu Dhabi alone, the payout figures (including investment income) would be significantly higher than this figure. Qatar, with its rapidly growing gas revenues and citizenry of about 200,000, is likely to be in the same fortunate position as Abu Dhabi. Kuwait still has significant foreign investments, even though it spent a large portion for its liberation and reconstruction; we estimate Kuwait's foreign holdings to be in the neighborhood of $ 100 billion. In the case of Kuwait, Qatar and the UAE the issue is not so much that citizens of these countries are likely to starve any time soon. Instead the issue is that the wealth of nationals should be preserved for them and for future generations in an *optimal, equitable* and *transparent* manner. This depleting wealth should not be seen as the birthright of rulers (also in Saudi Arabia) to use in order to buy loyalty, to waste on grandiose projects and military hardware and to support shortsighted economic policies.

5. Implementation issues

We now turn to some of the operational, social and economic issues.

5.1. *Who is the beneficiary?*

It seems reasonable that only citizens should be the beneficiaries of any payout from the Fund as the oil belongs to citizens of all generations.[23] A pertinent question is whether payouts should be given to adults only. If payouts are given to all citizens regardless of age, is it reasonable to assume that a minor would be sufficiently responsible? Should the payment then be made to the parent or the guardian of a minor? If yes, then such a policy could encourage population growth (and the more children one has, the larger the share of the Fund's payout). On the other hand, if the first payment (representing the accumulated annual payouts from the prior 16 or 18 years) to a citizen is set contemporaneous to the attainment of adulthood, would that expectation of such a financial 'windfall' create moral hazards and result in unintended waste? For the purpose of our illustrative calculations, we assumed that annual payouts are made only to those over 18 years of age.

5.2. *Moral hazards and conditionality*

Given the moral hazard issue identified above, one could argue for instituting compensating factors that would serve to minimize unintended consequences. Specifically, the first payment from the Fund could be tied to some socially acceptable (or desirable) criteria. For instance, for those in 18-to-30 age bracket, the first and subsequent payouts could be made conditional to the citizens' achieving a minimum level of educational proficiency, or indeed, for having a history of productive and legal employment if not attending school. Such a condition

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[23] The definition of 'citizen' is itself a complex topic. For instance, in most countries a non-citizen spouse of a citizen could elect for citizenship status. If that were the case, would the spouse who was recently granted citizenship be entitled to the same payout from the Fund in the same manner as the indigenous? What about extended families of the spouse?

would encourage literacy amongst the populace and could support economic growth. Another condition that could be attached to a citizen's right to receive current and future payouts from the Fund is the maintenance of a clean civilian record. Depending on the nature of the offense, a felon may forfeit his or her right to further payouts from the Fund.[24]

A potentially interesting application of the Fund is to explore the design of the Fund to mimic the role that social security plays in the wealthier countries. Thus, payouts could be higher when a citizen reaches a certain given (retirement) age. These and other features could have a significant effect on a number of related factors, such as birth rates. For our limited illustrative purposes here we assumed none of the above-mentioned options.

5.3. Societal productivity

An obvious attack on any scheme is that individuals would become lazy, would not work and in the process society would become less productive. While this is a legitimate concern, it need not become a fact of life. If governments develop effective institutions, adopt rational and consistent economic policies and generally provide a supportive business climate, citizens will be more motivated (and will have the resources) to invest and invigorate private sector growth. At the same time the eligibility to receive payments from OFAG can be tied to definable, objective and socially desirable achievements.

5.4. Investments, payouts and the use of funds

The payout objective must be set with the ultimate goal of making reasonably constant and fair payouts to current and future generations. To that end, the Fund should invest the unpaid balance into a portfolio of well-diversified mix of the real and financial investments across a broad range of countries, currencies, asset classes and non-oil indus-

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[24] Here, the money that would have been paid out to felons may instead be re-directed to law enforcement bodies and also to finance prisons, rehabilitation centers and so on.

tries. The size of the payout would need to be re-calculated periodically and the various input assumptions would need to be pegged to some pre-determined moving average, as does the State of Alaska.

Another issue that could arise is government borrowing from the Fund (or collateralization of the Fund to borrow from third parties). We assumed no such borrowing or collateralization options in our calculation. We stress that the key tenet of our Manifesto is the separation of all future oil/gas revenue from the hands of governments and ruling families in the OECPG. To make the assets of the Fund available either directly or indirectly to these governments would open the Pandora's box and undermine the effectiveness of the Fund.

5.5. *Effective tax policy*

The success of the OFAG also depends on efficient income tax policy and an effective system of taxation in place. None of the Persian Gulf oil exporters have an effective income tax system to address social and economic needs (Iran has an ineffective tax system while the others do not have an income tax system in place). Given the waste of oil revenues over the last thirty or so years, it is clear that much more thought is required on how oil revenues should be used and what form of tax system would best meet the needs of current and future generations in order to address efficiency, simplicity and fairness (social justice).

5.6. *Fund administration*

The operations of the Fund must be totally transparent. A Fund needs to have clear independence and authority with respect to investment decisions and general management. The Fund's administrators must have direct reporting lines to the governing board, and their employment/succession, performance and compensation be determined solely by the board. The administration of the Fund and the formal processes it adopts should not be a part of the civil government structure, be reliant on any government entities nor have any connection to ruling families and elites. Accordingly, the governments of the OECPG will not have real or ostensible authority over the Fund's management.

5.7. Governance and control

A fundamental concern with the establishing of an OFAG is the governance structure of the Fund. There needs to be integrity among those who can influence strategy and financial performance. The governance body (possibly a Board of Directors not dissimilar to a modern corporation) should comprise of individuals with a balance of skills, experience and independence appropriate for the management of the Fund. Mandatory and periodic disclosures with respect to the Fund's balances, investment policies and results, flow of funds, material matters and even personal financial disclosures of the board members would instill public confidence and minimize potential malfeasance. Furthermore, the rights of citizens, the Fund's beneficiaries, need to be clearly articulated and upheld. Effective internal control mechanisms must be put in place to ensure the proper functioning and governance of the Fund.

5.8. Transitional phase

The cutback of oil revenues to the government may have to be made on gradual basis over a transitional period of, say, 10 years. Given the gross reliance of OECPG governments on oil/gas revenues today, it would be unrealistic to expect a sudden withdrawal from it to be politically and structurally feasible. In our calculations in this paper, we have assumed no transition phase.

5.9. Provision of government services

Some may find our proposal objectionable because crucial government services could be reduced or even eliminated. They argue that governments should have access to 'some' oil revenues in order to provide services that are universally expected of a government: education, healthcare, retirement and public safety. Our broad answer to this line of reasoning is that governments could provide at least some of these services *but* they should finance them through income taxes that are fair and efficient, as non oil-exporters try to do. More specifically, in many of the countries, payouts from OFAG would be sufficient to

cover private funding of education, healthcare and retirement. In cases where they are insufficient, governments should provide them and they should be financed by taxation. The danger of allowing governments to take some oil revenues for 'specific and noble causes' is that governments can then use funds from taxation in wasteful areas as they have done in the past with oil revenues; money is, after all, the most fungible of commodities. It should also be remembered that we support a transition period of up to ten years for taking all oil revenues from governments. Clearly, the range of potential issues in implementing an Oil Fund is far-reaching and different for each country, and a comprehensive assessment and analysis would in itself occupy a volume beyond this paper.

6. Conclusion

There can be little doubt that the oil exporting countries of the Persian Gulf have failed economically. While oil has supported government revenues, economic and social injustice has become all-pervasive. It is time for a change while oil and gas reserves last. OFAG will take easy money away from the hands of governments and of rulers, waste and corruption are likely to be reduced, there will be better chance of adopting and implementing rational economic policies, and equity across generations is more likely to become a reality.

Looking at the spectrum of countries, in Kuwait, Qatar and the UAE, such a fund would make each and every family rich beyond belief while limiting the benefits of the ruling classes. In Saudi Arabia, and to a lesser degree Iraq, payments from OFAG can make a significant contribution to the income of average families while again reducing the benefits of the rulers in Saudi Arabia and the emerging elite in Iraq. In the case of Iran the payment, though smaller, will make a difference for the average family and reduce corruption and the financial take of the elite. All of this will be most effective if it is supported by an effective income tax system and a period of transition as government oil revenues are reduced.

Careful considerations should be given in each country, on a country-by-country basis, to design a system that affords appropriate incentives to individuals to live productive lives and to contribute to

national economic and social prosperity. Finally the rulers and elites in all of these countries will condemn any idea of an OFAG as proposed here. It will become a reality if it is touted and supported by international agencies, NGOs and academics, and given international recognition by the media.

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