THE GULF SOVEREIGN WEALTH FUNDS: MYTHS AND REALITY

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The financial world is abuzz with the issue of Sovereign Wealth Funds (SWFs), especially those that have become swollen by oil revenues in the Arabian/Persian Gulf. There are estimates from highly respected banks and consultants that put the wealth of the Gulf SWFs at about $1.5 trillion,[1] increasing at a very rapid rate with oil at $100 per barrel and higher. Estimates from the consulting firm McKinsey show an accumulation of oil income in the Gulf Cooperation Council (GCC) countries at $2.4 trillion by 2010 and $8.8 trillion by 2020.[2] In spite of significant spending within the GCC, McKinsey expects $5 trillion to be invested outside the Gulf by 2020.[3] Much of this large pool of investments is expected to end up in the Gulf SWFs. The reputedly largest of these funds is the Abu Dhabi Investment Authority (ADIA), which is reported by Deutsche Bank to have about $875 billion under management today.[4]

The corollary of these estimates is that this money must get invested somewhere and where better than in shares in the major financial institutions of Wall Street, which have suffered seriously from their less-than-wise investments in subprime mortgage paper. Of course, underlying this speculation is the fear that one or more major U.S. financial institutions will end up in the hands of highly secretive SWFs that originate in Arab countries. The assumption here is that foreign funds, in particular Arab funds, are nefarious, endanger U.S. security and promote changes in U.S. foreign policy and our way of life.

This paper will argue that the reality is somewhat less scary. It will evaluate the logical amounts held by the SWFs of the Gulf and show that the amounts they manage are half or less of what has been mentioned by the likes of McKinsey and Deutsche Bank. Hence, the amounts available for investments in the United States are relatively small compared to the actual needs of the large U.S. financial institutions that are today in great need of capital support. The paper will argue that no Gulf SWF could come close to taking a controlling stake in such firms as Citibank or JP Morgan, whose highly depressed capitalizations are still above $120 billion and $145 billion, respectively. Perhaps more dangerous to the U.S. economy and "way of life," is that these SWFs may have no appetite for U.S. assets for fear of a xenophobic backlash similar to the one

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whipped up by U.S. politicians at the time of the Dubai Ports World (DPW) debacle. In effect, such fear is forcing the SWFs to be invested in other countries and in non-U.S. firms, thereby protecting and improving some other countries' "way of life" at the expense of ours.

OIL INCOME

The countries of the Gulf relevant to this paper include the six members of the GCC (Saudi Arabia, Kuwait, Bahrain, Qatar, the UAE and Oman) and Iran. Unfortunately, Iraq is not included. Indeed, Iraq's oil income, while rising with the price of oil, is also used in waging the war, providing subsidies to keep people alive and reconstructing the country. Iraq has no extra cash left after its daily expenses and thus no funds for investment abroad.

The countries of the Gulf produce about 19 million barrels per day (b/d) and about 2.5 million b/d of natural-gas liquids (NGLs). The largest producer is Saudi Arabia, which in 2008 is producing about 9.2 million b/d.[5] This Gulf production is a mix of light and heavy crudes. The light crudes are close in quality to the West Texas Intermediate (WTI) crude sold on NYMEX or the Brent sold on the International Petroleum Exchange (IPE) in London. These two reference prices are the base of most oil pricing in the world today. However, the shipments out of the Gulf also contain a large volume of heavier crude that is sold at a substantial discount. One must also point out that the Gulf countries may produce 19.45 million b/d[6] but do not export as much. Indeed, they refine about 5.5 million b/d[7] themselves, and most of the refinery products are used locally. Saudi Arabia refines about 2.5 million b/d and uses about 2 million b/d locally. Thus, the actual net exports of oil, including the exports of products such as diesel or gasoline and NGLs, total about 17.5 million b/d.[8]

The Arab states of the Gulf only sell their petroleum to the oil majors or to very large utility companies in the Far East. They do not sell to traders. The contracts under which these sales take place tend to provide a formula based on an averaging of prices for NYMEX or Brent crudes or an artificially devised Oman-Dubai market that is used for pricing shipments to the Far East. In all cases, however, the prices computed include a discount compared to the actual NYMEX or Brent price to make up for the distance between the fields of the Gulf and those of Europe or the United States. Hence, when oil is traded at $100/b in New York at NYMEX for WTI, the actual price paid to the Saudis for similar grade oil will be about $90/b. Considering that, on average, the crudes produced in the Gulf are of lower grade than WTI or Brent, the average income may be discounted by as much as 20 percent from the WTI market after the discount for distance. At $100/b in New York for WTI, this would imply that income from oil in the Gulf would be about $1.05 billion per day. On an annualized basis, this would amount to $385 billion per year. By any account, this is a very large amount of money. However, it is a far cry from the amounts estimated by McKinsey, which places the yearly income at about $710 billion per year. Of course, if one forecasts the future with this kind of discrepancy, one can see that the estimated inflow of income into the Gulf will vary wildly, from $3.8 trillion, which is by no means small, to $7.1 trillion, which is indeed staggering.

The table attached in Appendix A

computes the average income from Gulf oil exports. It provides only a rough estimate, but is based on as much information as is available in the public domain. It includes the exact figures provided by Saudi Aramco and expands from there to estimate income to 2008. In computing the actual income from production, I only use earnings on exports, not on locally used products, as exports are sold for dollars and enter the balance-of-payment and cash-reserve figures.

The Gulf producers do not ship just Arabian Light, but also export Arabian Heavy and Arabian Medium, which are sold at a much lower price than light. They also sell a sizable volume of refined products and NGLs, which tend to sell at a substantial premium over Arabian Light. The exact mix of products changes according to the national oil companies' production schedules and their ability to sell whatever portion of the mix brings the best return. It is, of course, limited by the production capacity of the refineries, the needs of local consumers and the field productions. I assume a mix of 10 percent heavy crude, 20 percent medium crude, 55 percent light crude, and 15 percent ultra light, products and NGLs. The earnings shown in the appendix are based on the actual price charged by Saudi Aramco on light, heavy and medium crude. I added a 15 percent premium to Arabian Light for the ultra light, products and NGLs. This shows income in 2006 for Saudi Arabia of $181 billion, substantially up from the $42 billion earned in 1999 but still below the $211 billion estimated for 2007 and the $307 billion expected for 2008. Assuming that the UAE has constraints and mixes somewhat similar to those of the Saudis, the table shows that the Abu Dhabi National Oil Company (ADNOC) had income in 2006 of $56 billion, compared to $13 billion in 1999 and an expected $63 billion in 2007, increasing to $87 billion in 2008.

These figures are for gross income. They do not include a number of other factors that substantially reduce the amounts the states can keep and invest into the SWFs. The major deductions that must be accounted for to improve any estimate of cash available for the states are the following:

- Cost of production
- "Evaporation" (how much is siphoned off by the royal families)
- Non-productive expenses for the military
- Daily expenses to manage government budgets (salaries, civil servants' wages, purchases of goods).

Most of these deductions have to be estimated, since the governments do not release the exact figures. However, various sources provide approximations of the actual expenditures. The cost of production varies according to each field and the amount of technology expended in exploring, pumping the oil out of the ground and maintaining the fields. The figures most often quoted by the specialized press and petroleum engineers vary between $1.50/b and $8.00/b.[9] Lately, this cost has tended to creep up due to the aging of some of the main fields, such as the Ghawar field in Saudi Arabia, which require more effort to maintain the same level of production. In this exercise, I have assumed an average cost of production at $4.00/b.

The evaporation factor is much more speculative. It is taken for granted by most

Gulf experts that the royal families use part of the oil income to pay each family member a yearly allowance. In 1998, Prince al-Waleed bin Talal bin Abdelaziz said in an interview that princes on average were getting $150,000 per year. At the time, and assuming a Saudi royal family of about 15,000, this amounts to about 7 percent of the gross oil revenues after production cost, a percentage that I have carried through the years and applied to all GCC countries.

Military expenses must also be deducted from oil income to compute the amounts that can go into SWFs. I have used the estimates of the International Institute for Strategic Studies (IISS) in London and the Center for Strategic and International Studies (CSIS) in Washington, which estimate these figures every year.

Finally and most important, the states need to run their budgets. This requires payments of salaries to civil servants; the purchase of goods and materials for the maintenance of the state infrastructure; and capital expenses such as roads, airports, harbors, etc. (when the figures are available).

In running the figures for Saudi Arabia and the UAE, it is quite remarkable that we obtain net incomes that are substantially lower than the amounts suggested by McKinsey or Deutsche Bank. Indeed, our computations indicate that Saudi Arabia's net income is often negative and has only become positive when the price of oil has gone above $50/b. In the UAE, which has much lower military and budget requirements than Saudi Arabia, net income between 1999 and 2007 totaled $127 billion, most of which was earned in the past five years. In 1999, when the price of oil in the Gulf mix was on average $17, the UAE was barely breaking even. The situation improved rapidly, and in 2003 at a mix price of about $26/b, UAE net revenue was at $2.4 billion.

With so much money available, [the leadership of Abu Dhabi] may approve a sizable amount to be placed in high-risk, high-return portfolios but will probably not authorize huge bets and will limit the risk to a small portion of an otherwise strategic and conservative portfolio.

It is of interest to note that the figures released by the Central Bank of the UAE in its third quarter 2007 bulletin show income from "Oil and Gas"[10] to be within 10 percent of the figures shown in the appendix as "Average Net Income of Evaporation and Military Expenses."

THE SWFS

Abu Dhabi

ADIA in Abu Dhabi was founded in 1976 by the Abu Dhabi Investment Council, which is owned by the government of Abu Dhabi.[11] The Council owns a number of other SWFs: the Abu Dhabi Investment Company (ADIC) is reported by Zawya.com to have $7 billion in assets; Mubadala, $10 billion in assets; the International Petroleum Investment Company

(IPIC), $6.5 billion in assets; and the Abu Dhabi National Energy Company (TAQA), $9 billion in assets.[12] Thus, there would be $32 billion in assets above what is owned by ADIA.

Only ADIA and Mubadala seem to have received much press coverage, probably because they were involved in large transactions with Citibank and the Carlyle Group, both of which have been in the eye of reporters. IPIC, ADIC and TAQA are also active in a number of transactions of great importance, albeit less showy ones. For example, IPIC owns 17 percent of OMV AG of Austria, which is a prime technology company in the petrochemical industry. By having such a large stake as well as the control of Borealis of Norway, Abu Dhabi has full control of the technology needed for its very large chemical plant, Borouge. Mubadala, besides the stake in Carlyle, also has stakes in Mediobanco of Italy and Lease Plan of Italy. Of some importance, considering today's high prices for commodities, it owns an 8.3 percent stake in Guinea Alumina Corporation, a joint venture with BHP Billiton that transforms the bauxite of Guinea into alumina. The alumina, in turn, is shipped to Bahrain, Dubai and other aluminum-producing countries. As Mubadala is planning a 1.4 million tons per second (t/s) aluminum plant in Abu Dhabi, this stake appears highly strategic and in the same vein as the purchase of a stake in OMV.

All these investments put together, however, do not come close to totaling $875 billion but would point more towards a total of $150 billion. The increase from $150 billion has been explained as coming from superb investments in numerous unconventional funds. Some investment managers argue that ADIA may have invested heavily in the emerging markets, and that this has allowed it to reap many times its input. This argument, however, does not bear out. Unfortunately, the investment community has not yet found a way around the old saw that high returns imply risky investments. The very best funds managers will make excellent returns from time to time, but also big mistakes, as illustrated by the saga of numerous hedge funds in the United States and the subprime mortgage debacle. One cannot seriously imagine the managers of ADIA and ADIC going to their owners in Abu Dhabi and obtaining the green light to do anything but risky-sure-bet types of investments. The leadership of Abu Dhabi is highly sophisticated, has seen hundreds of opportunities and is most unlikely to approve a very aggressive stance. With so much money available, they may approve a sizable amount to be placed in high-risk, high-return portfolios but will probably not authorize huge bets and will limit the risk to a small portion of an otherwise strategic and conservative portfolio. It is very indicative that the known investments, which may total around $30 billion in book value,[13] are fundamentally in very conservative companies, which may have temporary setbacks like Citibank, but which ultimately are extremely solid firms. It is equally important to note that the Abu Dhabi funds seem, by and large, to take only small minority shares in companies. This policy may be established to diversify financial risk, but it also guarantees minimal political blowback. The flurry of press when ADIA took a non-voting stake in Citibank is indicative of to the problems that can be created.

As mentioned earlier, the funds may not be getting 100 percent of Abu Dhabi's

cash flow from oil. If we were to assume that the funds get 70 percent of overall income and that ADIA gets 70 percent of these, then ADIA over the past 30 years would have to have returned about 22 percent per year every year on the accumulating capital (see appendix). This is most unlikely indeed.

Of course, ADIA could increase its return by leveraging its investments. Certainly ADIA would have no problem raising funds from banks. It could not raise funds from the Western banks easily without disclosing all of its assets, investments and policies, but it probably could raise substantial sums from the locally owned banks in the UAE. However, the amounts borrowed would have to remain relatively low compared to the purported balance sheet of ADIA or be in violation of the lending limits of each of the banks. Further, even local banks have to provide information to the central bank and their correspondent banks on their main clients. Thus, it is unlikely that ADIA would consider borrowing in a significant manner, even from local institutions. Altogether, I think that the assets of all the SWFs in Abu Dhabi may amount to about $300-400 billion, of which not more than $300 billion are held by ADIA.

None of the Abu Dhabi SWFs disclose their assets, their earnings or their policy. This creates a situation that other fund managers and newspaper editors find very titillating. The assets, as reported by the press, consultants and banks, may be set so high in part due to the very secretive nature of the Abu Dhabi investment authorities. What is hidden in the closed offices of the ADIA tower in Abu Dhabi seems to be the treasure of Ali Baba's cave. There is some value to keeping the world guessing. Fund managers salivate at the opportunity to get a small piece of the pie. It certainly would allow the managers of ADIC and others to obtain the very best fees and profit-sharing arrangements. It is encouraged by consultants and banks, who find benefit in advertising to their clients that ADIA and the other funds are rich beyond expectations and that any organization will need their fee-charging help to define policy with regard to Abu Dhabi. Naturally, it is possible that the Abu Dhabi authorities want to hide their profits, but it could also be that it is a convenient way to hide losses. No investment manager is perfect. No investment manager can transform $150 billion earned over 30 years, from very humble beginnings up to seven years ago, into $875 billion.

Of course, the prospect of a small group of people controlling $875 billion is worthy of attention and will create questions about the ulterior motives of these managers. However, as mentioned, the amounts are vastly lower and spread among more than one fund. It is also very likely that the managers of the oil manna over the years are a conservative lot. They have a fiduciary responsibility to their autocratic owners and are unlikely to take wild risks, albeit while still trying to maximize return. Perhaps of some importance is the possibility that the secrecy is not so much needed to protect the funds from inquisitive foreign eyes as from even more inquisitive local eyes. Indeed, one can argue that the funds of Abu Dhabi do not belong to the ruling al-Nahyan family but to the people of Abu Dhabi and, by extension, to the people of the United Arab Emirates. The al-Nahyan are the stewards of this money, not the owners. Hence, it could be awkward for the ruling family to have the

country be overly informed of the amounts, investments and procedures of the funds under their fiduciary responsibility.

OTHER GULF STATES

Qatar

The only other SWF as secretive as Abu Dhabi's is the Qatar Fund, belonging to the Qatar Investment Authority. It received press coverage when it took a 24.97 percent share in Sainsbury Plc, the well-known British grocer. It also has a substantial stake, 10.58 percent, in the London Stock Exchange; a 2 percent share of Credit Suisse, the second-largest Swiss bank; and a 6 percent share of Lagardère, the large French defense contractor. The fund reportedly has $60 billion in assets.[14]

Kuwait

Kuwait has had a SWF since 1963, when the Kuwaiti government began to take 10 percent of gross oil revenues for investment overseas and placed the funds in a special-purpose vehicle called the Reserve Fund for Future Generations (RFFG). By 1991, Kuwait had over $100 billion in assets and was earning more from its investments than from oil. The money was held and managed by the Kuwait Investment Office (KIO) out of London. It was managed quite secretly; no one except the amir and a very few of his associates knew how the fund operated and how the funds were invested. The RFFG became somewhat of a savior to the Kuwaiti people. Indeed, when Saddam Hussein invaded Kuwait and took over the levers of government, he could not get access to the main funds as the investments were being held in the UK. The night of the invasion, the British authorities, like all the other governments in the world, blocked Kuwaiti accounts so that Saddam Hussein could not get hold of them. Thus, with substantial funds in a UK company, the amir could have access to money. He used it to pay each exiled Kuwaiti family a substantial allowance, allowing the exiles to wait comfortably until the United States and its allies liberated the country. Of course, this reduced the amounts available quite substantially, and by the end of the war and after subsequent spending on the repairs to the sabotaged oil fields and state infrastructure, Kuwait was left with precious little in the RFFG. Today, however, Kuwait has recovered well from the war. It has been helped by the recovery of the price of oil since 1999.

The total today in the RFFG is about $213 billion.[15] The detailed figures and results are not passed on to the public, but they are not just the preserve of the amir. The RFFG is no longer supervised by the KIO, which used to refer directly to the amir, but by the Kuwait Investment Authority (KIA), which itself is under the supervision of the Ministry of Finance. The KIA by law has to report regularly to the Council of Ministers, and at times the ministers will inform parliament, thus giving the world a rather accurate estimate of the amounts involved. The investments are not known in detail, but there were some very dodgy investments in Spain in the mid-1990s. An extensive inquiry led KIA to take over management of the RFFG, and it is likely that the fund is now managed in a very conservative manner. Kuwait, like Abu Dhabi, does not seek to take controlling interest in companies. Among their largest investments are 6.93 percent of Daimler Benz and 6 percent of Citibank. In the 1980s, Kuwait did attempt to take a major stake in British Petroleum, but it was

forced by the Thatcher government to sell half of its stake of 15 percent. Since then, it has sold most of it to BP. Kuwait made a great deal of money on the transaction, as BP's shares had risen substantially during this incident. Kuwait was somewhat burned in the process, however, and appears to have learned not to seek again to take a major stake in a strategically important Western company.

Saudi Arabia

The Saudi authorities are perhaps the most conservative in the Gulf. The Saudi Arabian Monetary Agency (SAMA) manages the assets of the kingdom, today holding about $289 billion of assets, mostly in short-term U.S. Treasury notes. The funds managed by SAMA are held on behalf of local state entities, which in turn invest mostly locally. The main investment funds of Saudi Arabia are state owned and are not invested overseas. They are not standard SWFs. However, they are invested locally in the development of industry and services. The main state funds are the Public Investment Fund (PIF), the Saudi Industrial Development Fund (SIDF), and the General Organization for Social Insurance (GOSI), the social-security fund of the kingdom, in which both employees and employers pay monthly. GOSI's funds are held in trust for the kingdom's employees but managed by SAMA. Like the U.S. Social Security Administration, the Saudi government has used it extensively to fund the large budget deficits of the 1980s and 1990s. It is now used to lend funds to the large industrial ventures being created in the kingdom like PetroRabigh, the joint venture between Saudi Aramco and Sumitomo, as well as various SABIC chemical ventures, such as Yansab and Saudi Kayan.

Unlike the other countries of the Gulf, Saudi Arabia does not seek to invest long-term overseas. The kingdom needs to develop its own country and create employment for its 18 million inhabitants. It will invest its surpluses in U.S. Treasury bonds, but only if it can sell them to fund its own growth. The country's monetary authorities are fiercely independent. They do not wish to be dictated to by the IMF, the World Bank or the United States. Even in the early 1980s and again in the late 1990s, when the budget deficits were in the tens of billions of dollars, the Saudi authorities did not borrow from foreign institutions. It did borrow up to $190 billion, but only from its own banks and GOSI. By the same token, the monetary authorities are not keen to be dependent on fickle overseas markets. They view their future as being within the kingdom. They want to develop their own economy in value-added oil and gas products downstream. Hence, they do not take stakes in foreign companies or countries. This policy is unlikely to change in the near future, as the civil service that runs monetary policy is well entrenched and is seen as being good stewards of the country's financial assets. The very substantial earnings from oil over the past three years, even after costs, payments to the royal family and full

[Saudi Arabia] will invest its surpluses in U.S. Treasury bonds, but only if it can sell them to fund its own growth.

funding of the budget — estimated in the appendix to reach $63 billion in 2008 — is not invested abroad. A large chunk is used to pay down the public debt, which is now below $90 billion. A large amount is being expended in modernizing and expanding the infrastructure, substantially increasing the salaries of the public service (the largest employer of Saudis). There have been rumors that a $6 billion fund would be established for foreign investments, but no actual fund has been created as yet.

CONCLUSION

The size and importance of the Gulf SWFs have been greatly exaggerated, especially the size of ADIA, which may be as low as $300 billion. This, however, is still a very high figure. The other SWFs of the Gulf seem to maintain a much lower profile and wish to keep it that way. The Saudis simply do not invest outside the kingdom, except in short-term treasury bonds, mainly in U.S. dollars. The Kuwaitis invest in some industrial concerns but always in small minority stakes and are unlikely to become any more aggressive in the future. The Qatari and UAE funds tend to be very secretive; hence, the interest that they generate. However, the secrecy of these funds does not necessarily conceal a wish to take over large chunks of the Western world. In fact, the secrecy is probably a way for the managers to protect themselves at home against inquisitive citizens who would criticize decisions and perhaps seek to influence investments in areas not deemed appropriate by the leadership of these states.

The Gulf SWFs seek to have their owner-states become less dependent on one commodity, oil or gas. They strive to establish long-term protection in light of their dependence on these nonrenewable resources. They also seek strategic industrial gains to control access to technologies in commercial and industrial areas. The Gulf SWFs are managed by smart and careful managers who seek to maximize long-term gains. It is not credible to imagine that the Gulf funds make huge returns on high risks, as hedge-fund managers would, and on which hedge-fund shareholders win and lose staggering amounts of money. The Gulf SWFs have a fiduciary responsibility to their owners, like the al-Nahyan family in Abu Dhabi, who are ultimately the stewards of their people's wealth. They will want to grow and take advantage of good deals as they come up. However, they will not attempt to take over strategically sensitive companies in the West. First and foremost, the Gulf funds are not large enough to even think of taking controlling interest in large Western firms. Citibank's market capitalization at a very depressed price today is over $120 billion. Major financial and industrial concerns like General Electric have market caps of $320 billion. The net profits after tax of ExxonMobil are twice the GNP of Bahrain. Hence, the Gulf SWFs by their size cannot present any strategic danger to the United States. They have learned from experiences such as the Dubai Ports World debacle in the United States and the BP divestment under Margaret Thatcher that such use of their money can backfire and that, ultimately, they cannot create hostile takeovers.

Perhaps, however, one can regret that the United States, in particular, is so allergic to Arab money. This is keeping many investments in medium-size quality firms lower than might be expected. There is today among Arab investors, including

the Gulf SWFs, a fear of becoming a political football in the United States. Senator Chuck Schumer (D-NY) and other area politicians were able to foment anti-Arab sentiment and therefore strong opposition to the DPW deal on the erroneous basis that DPW would create a danger to U.S. security. The Arab investors very quickly understood that the opposition to the DPW deal was fundamentally anti-Arab and that U.S. politicians would not shy away from using the sentiments stirred by 9/11 to create gains for themselves or to destroy another politician. This fear of the American political system could end up being very costly for the United States. Indeed, many companies could benefit from an inflow of capital from the Gulf and in the process protect a large number of jobs. Instead, the Gulf SWFs are looking north and east to Europe, China and India for sizable investment opportunities; they are by and large welcomed in these areas. By making itself into an anti-Arab bastion, the United States is cutting itself off from better integration into the world economy and ultimately giving up market share for its goods and services to its competitors.

[1] "Sovereign Wealth Funds: Investment Vehicles for the Persian Gulf Countries," Nimrod Rapheali and Bianca Gersten, *Middle East Quarterly*, Vol. 15, No.2 (Spring 2008), pp. 45-53.
[2] "Gulf Tipped to Ride Wave of Soaring Prices." Simeon Kerr, *Financial Times*, January 24, 2008, http://www.ft.com/cms/s/0/a634c13e-ca09-11dc-b5dc-000077b07658.html?nclick_check=1.
[3] "The New Role of Oil Wealth in the World Economy," Diana Farrell and Susan Lund, *McKinsey Global Institute*, February 7, 2008, http://www.euractiv.com/en/euro/new-role-oil-wealth-world-economy/article-170187.
[4] Rapheali and Gersten, pp. 45-53.
[5] "OPEC Crude Oil Production," *Middle East Economic Survey*, Vol. 51, No. 5 (February 2, 2008), p. 2.
[6] Saudi Arabia 9.22, Iran 4.07, UAE 2.55, Kuwait 2.55, Qatar .84, Oman .8, Bahrain .15.
[7] Saudi Arabia refines about 2.5 million b/d, Iran = 1.4, Qatar=.3, UAE=.4, Kuwait= .5, Bahrain =.3.
[8] Saudi Aramco, http://www.saudiaramco.com/irj/portal/anonymous.
[9] Oil Industry Statistics from Gibson Consulting, http://www.gravmag.com/oil.html.
[10] Central Bank of the United Arab Emirates, Third Quarter Bulletin, 2007, p. 58.
[11] *Sovereign Wealth Fund Institute*, "Abu Dhabi Investment Council." March 26, 2008, http://www.swfinstitute.org/fund/adia.php.
[12] Ibid.
[13] This amount covers all the Abu Dhabi Investment Council's investments. It is probably a very high guess, but indeed is nothing but a guess. It includes $7.5 in Citibank, $2 billion in OMV, 7.5 percent of Carlyle Group, etc.
[14] *Sovereign Wealth Fund Institute*, "Qatar Investment Authority," http://www.swfinstitute.org/fund/qatar.php.
[15] International Monetary Fund, *Sovereign Wealth Funds — A Work Agenda*, Washington, DC, February 29, 2008.

APPENDIX A

AVERAGE GROSS INCOME FRON GULF OIL EXPORTS

	1999	2000	2001	2002	2003
Average Export Income					
Saudi Arabia	$42,608,022	$71,575,708	$59,885,622	$51,830,518	$72,609,642
Iran	$17,446,073	$27,335,715	$23,749,750	$23,222,617	$26,683,587
Kuwait	$14,330,703	$22,454,337	$19,508,723	$19,075,721	$21,918,660
UAE	$13,707,629	$21,478,062	$21,544,416	$21,066,231	$24,205,825
Qatar	$4,984,592	$7,810,204	$6,785,643	$6,635,033	$7,623,882
Oman	$4,984,592	$7,810,204	$6,785,643	$6,635,033	$7,623,882
Bahrain	$623,074	$976,276	$848,205	$829,379	$952,985

	2004	2005	2006	2007	2008
Average Export Income					Annualized Est.
Saudi Arabia	$99,191,363	$151,210,891	$181,407,185	$211,272,935	$307,648,880
Iran	$34,422,266	$49,642,638	$61,573,611	$70,340,573	$96,301,494
Kuwait	$28,275,433	$40,777,881	$50,578,324	$57,779,756	$79,104,799
UAE	$31,225,913	$45,032,964	$55,856,062	$63,808,948	$87,359,213
Qatar	$9,834,933	$14,183,611	$17,592,460	$20,097,307	$27,514,713
Oman	$9,834,933	$14,183,611	$17,592,460	$20,097,307	$27,514,713
Bahrain	$1,229,367	$1,772,951	$2,199,058	$2,512,163	$3,439,339

AVERAGE EXPORT INCOME NET OF PRODUCTION COSTS

	1999	2000	2001	2002	2003
Average Export Income					
Saudi Arabia	$32,624,022	$60,871,708	$49,577,622	$42,706,518	$61,485,642
Iran	$13,358,073	$23,247,715	$19,661,750	$19,134,617	$22,595,587
Kuwait	$10,972,703	$19,096,337	$16,150,723	$15,717,721	$18,560,660
UAE	$10,495,629	$18,266,062	$17,836,016	$17,357,831	$20,497,425
Qatar	$3,816,592	$6,642,204	$5,617,643	$5,467,033	$6,455,882
Oman	$3,816,592	$6,642,204	$5,617,643	$5,467,033	$6,455,882
Bahrain	$477,074	$830,276	$702,205	$683,379	$806,985

	2004	2005	2006	2007	2008
Average Export Income					Annualized Est.
Saudi Arabia	$87,411,363	$138,758,891	$169,363,185	$198,994,335	$294,589,180
Iran	$30,334,266	$45,554,638	$57,485,611	$66,252,573	$92,213,494
Kuwait	$24,917,433	$37,419,881	$47,220,324	$54,421,756	$75,746,799
UAE	$27,517,513	$41,324,564	$52,147,662	$60,100,548	$83,650,813
Qatar	$8,666,933	$13,015,611	$16,424,460	$18,929,307	$26,346,713
Oman	$8,666,933	$13,015,611	$16,424,460	$18,929,307	$26,346,713
Bahrain	$1,083,367	$1,626,951	$2,053,058	$2,366,163	$3,293,339

AVERAGE INCOME NET OF EVAPORATION AND MILITARY EXPENSES

	1999	2000	2001	2002	2003
Saudi Arabia	$10,451,643	$33,204,729	$19,564,933	$16,104,059	$33,562,487
Iran	$6,363,008	$13,648,375	$16,053,427	$14,606,194	$17,824,896
Kuwait	$9,188,984	$17,977,971	$14,917,199	$14,314,377	$17,576,340
UAE	$5,721,935	$13,798,437	$13,611,495	$13,166,783	$16,086,605
Qatar	$2,061,431	$4,902,250	$3,417,408	$3,064,341	$3,983,970
Oman	$1,848,431	$3,945,250	$2,673,408	$2,639,341	$3,346,970
Bahrain	-$28,321	$430,156	$298,051	$283,543	$400,496

	2004	2005	2006	2007	2008
Saudi Arabia	$60,748,907	$102,000,272	$119,342,231	$150,979,485	$243,871,347
Iran	$24,490,867	$35,775,813	$46,702,618	$54,304,893	$85,758,550
Kuwait	$27,315,046	$38,396,246	$50,540,189	$58,441,050	$82,911,218
UAE	$23,890,287	$35,614,845	$38,609,325	$45,601,510	$69,795,256
Qatar	$5,828,248	$9,777,518	$12,844,748	$17,604,255	$24,502,443
Oman	$5,296,248	$8,894,518	$11,864,748	$14,306,255	$24,502,443
Bahrain	$816,531	$954,065	$1,411,344	$1,650,532	$3,062,805

AVERAGE OIL INCOME NET OF EVAPORATION, MILITARY EXPENSES AND BUDGET EXPENSES

	2004	2005	2006	2007	2008
Saudi Arabia	-$23,880,173	-$811,004	$2,629,471	$23,979,485	$106,871,347
UAE	$9,642,227	$19,289,998	$21,834,921	$28,501,510	$52,295,256

	1999	2000	2001	2002	2003
Saudi Arabia	-$44,100,582	-$36,623,757	-$56,144,266	-$53,183,775	-$42,698,640
UAE	-$5,841,850	$348,472	-$1,131,051	-$878,418	$2,643,991

APPENDIX B

ESTIMATE OF FUNDS PAID INTO AIDA IN PAST 31 YEARS

Estimate of Net Income of Abu Dhabi 1977 to 1987

	1977	1978	1979	1980	1981
Average Production of AbuDhabi [excl. Dubai] b/d	1000	1000	1000	1200	1191
Oil Price	13	13	13	30	30
Discounts dist.+Mix=.x	10.4	10.4	10.4	24	24
Gross Income	$10,400	$10,400	$10,400	$28,800	$28,584
Cost of oil/b	$ 2	$ 2	$ 2	$ 2	$ 2
$Cost of Production	$ 2,000	$ 200	$ 2,000	$ 2,400	$ 2,382
All Expenses	$ 7,384	$ 7,384	$ 7,384	$ 20,448	$ 20,295
Net Income	$1,016	$1,016	$1,016	$5,952	$5,907
To SWFs	$711	$711	$711	$4,166	$4,135
To ADIA	$498	$498	$498	$2,916	$2,895

	1982	1983	1984	1985	1986	1987
Average Production of AbuDhabi [excl. Dubai] b/d	1000	900	900	1000	1200	1200
Oil Price	30	28	28	28	15	15
Discounts dist.+Mix=.x	24	22.4	22.4	22.4	12	12
Gross Income	$24,000	$20,160	$20,160	$22,400	$14,400	$14,400
Cost of oil/b	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2
$Cost of Production	$ 2,000	$ 1,800	$ 1,800	$ 2,000	$ 2,400	$ 2,400
All Expenses	$ 17,040	$ 14,314	$ 14,314	$ 15,904	$ 10,224	$ 10,224
Net Income	$4,960	$4,046	$4,046	$4,496	$1,776	$1,776
To SWFs	$3,472	$2,832	$2,832	$3,147	$1,243	$1,243
To ADIA	$2,430	$1,983	$1,983	$2,203	$870	$870

Estimate of Net Income of Abu Dhabi 1988 to 1998

	1988	1989	1990	1991	1992
Average Production of AbuDhabi [excl. Dubai] b/d	1500	1600	1692	2022	1924
Oil Price	15	15	15	32	20
Discounts dist.+Mix=.x	12	12	12	25.6	16
Gross Income	$18,000	$19,200	$20,304	$51,763	$30,784
Cost of oil/b	$ 2	$ 2	$ 2	$ 2	$ 2
$Cost of Production	$ 3,000	$ 3,200	$ 3,384	$ 4,044	$ 3,848
All Expenses	$ 12,780	$ 13,632	$ 14,416	$ 36,752	$ 21,857
Net Income	$2,220	$2,368	$2,504	$10,967	$5,079
To SWFs	$1,554	$1,658	$1,753	$7,677	$3,556
To ADIA	$1,088	$1,160	$1,227	$5,374	$2,489

	1993	1994	1995	1996	1997	1998
Average Production of AbuDhabi [excl. Dubai] b/d	1840	1905	2200	2200	2300	2300
Oil Price	20	10	20	20	20	20
Discounts dist.+Mix=.x	16	8	16	16	16	16
Gross Income	$29,440	$15,240	$35,200	$35,200	$36,800	$36,800
Cost of oil/b	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2
$Cost of Production	$ 3,680	$ 3,810	$ 4,400	$ 4,400	$ 4,600	$ 4,600
All Expenses	$ 20,902	$ 10,820	$ 24,992	$ 24,992	$ 26,128	$ 26,128
Net Income	$4,858	$610	$5,808	$5,808	$6,072	$6,072
To SWFs	$3,400	$427	$4,066	$4,066	$4,250	$4,250
To ADIA	$2,380	$299	$2,846	$2,846	$2,975	$2,975

Estimate of Net Income of Abu Dhabi 1998 to 2008 [from Appendix A]

	1999	2000	2001	2002	2003
Average Production of AbuDhabi [excl. Dubai] b/d	2200	2200	2540	2540	2540
Net Income	-$5,842	$348	-$1,131	-$878	$2,644
To SWFs	-$4,089	$244	-$792	-$615	$1,851
To ADIA	-$2,863	$171	-$554	-$430	$1,296

	2004	2005	2006	2007	2008
Average Production of AbuDhabi [excl. Dubai] b/d	2540	2540	2540	2540	2540
Net Income	$9,642	$19,290	$21,835	$28,502	$52,295
To SWFs	$6,750	$13,503	$15,284	$19,951	$36,607
To ADIA	$4,725	$9,452	$10,699	$13,966	$25,625

Sources: Estimates computed from reports of APS Oil Production 08-01-07 and Energy Intelligence Agency. The percentages of funds distributed to SWFS and ADIA are this writer's estimates.

APPENDIX B-2

Total NET Income to 2007	$215,079
Total to all SWFs since 1997	$105,389
Total to ADIA since 1977 to 2007	$73,772

ASSUMPTIONS

Evaporation	7%	Estimated percentage of net income to SWFS	70%
Military Expenses	14%	Estimated percentage SWFs into ADIA	70%
Budget Expenses	50%		
Total	71%		

Estimated Rate of Return	22%	18%	15%	5%	1%
12/2007 Value of ADIA Fund in $MM at Est Average Return	$2,191,349	$5,126,505	$2,959,333	$350,974	$146,208