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WORKING PAPER

GCC Sovereign Funds

Reversal of Fortune

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Introduction

This Working Paper presents a model for estimating the size and likely growth of sovereign wealth funds in the countries of the Arabian Gulf. It is an attempt to shed light on an important set of actors in global capital markets whose activities are generally opaque. The model is necessarily based on the authors' assumptions; if these are off, the authors' conclusions will be off. Nevertheless, the authors hope that their analysis captures the basic dynamics of the major funds over the past few years—and that funds that believe the authors have misrepresented them will enhance their transparency to prove them wrong.

The model allows the authors to analyze the past growth and predict the future trajectory of the Gulf's sovereign wealth funds under different assumptions about oil prices. It suggests a number of striking conclusions. The size of the Abu Dhabi Investment Authority (ADIA) has been overstated, sometimes by as much as 100 percent. ADIA was also hard hit by the recent fall in global equities, as many of the same factors that worked in its favor from 2004 to 2007—a high allocation to equities, emerging market, and private equity—worked against it in 2008. Other sovereign wealth funds—including the Kuwait Investment Authority (KIA) and the Qatar Investment Authority (QIA)—are in a similar position. The Saudi Arabian Monetary Agency (SAMA) by contrast benefited from its fairly conservative portfolio. It is now likely to hold the largest sovereign portfolio in the Gulf. The external assets of the Abu Dhabi Investment Authority (ADIA) and Abu Dhabi Investment Council (ADIC) are now likely to be less than \$400 billion—and could be as low as \$300 billion—well below SAMA's over \$500 billion in assets.¹

The authors' analysis points toward a prudential rule for managers of sovereign funds: It is not wise for an oil exporter whose earnings are closely correlated with global growth to hold too much of its wealth in risk assets whose value rise and fall with global growth. For this reason, the much vaunted shift of national savings from bonds (which dominate traditional central bank reserves) to various forms of equity (held by sovereign wealth funds) may prove to be a less powerful trend than was widely expected a year or so ago.

Oil averaged just under \$100 a barrel in 2008,² as high prices in the second quarter and much of the third quarter offset low prices in the fourth quarter. That translated into an estimated \$300 billion inflow into the sovereign wealth funds and central banks of the Gulf Cooperation Council (GCC).³ This inflow, not surprisingly, topped the \$230 billion inflow in 2007 when the price of oil averaged about \$70 a barrel (a simple average of WTI, Brent and Dubai Fateh).⁴ However, the 2008 inflow was more than offset by the mark-to-market losses on the equity portfolios of the large sovereign funds.

All these funds now look likely to shrink in 2009, as the price of oil has fallen to the point where many Gulf economies will need to draw on their foreign assets to sustain their current level of imports. Estimates of the Gulf's current and future external wealth consequently need to be scaled back to reflect the large losses of many Gulf funds this year and the much more subdued pace of future asset accumulation that seems likely over the next couple of years.

Table 1: Estimated 2008 Gains and Losses of Gulf Funds, \$billion

	Estimated Value Dec 2007	Estimated Value Dec 2008	Capital Gains (losses)	New inflows	Gains/Losses as a share of Dec 2007 Portfolio
Abu Dhabi Investment Authority (ADIA)/Abu Dhabi Investment Council (ADIC)	453	328	-183	59	-40%
Kuwait Investment Authority (KIA)	262	228	-94	57	-36%
Qatar Investment Authority (QIA)	65	58	-27	28	-41%
Saudi Arabian Monetary Agency (SAMA) + assets managed for other government institutions ⁵ (estimated market value)	385	501	-46	162	-12%
Other GCC central banks	116	84	0	-33	0%
GCC Total	1282	1200	-350	273	-27%
Ow GCC "Big 4"	1165	1116	-350	306	-30%
Memo: Norwegian Government Pension Fund–Global	371	325 ⁶	-111	64	-30%

Sources: National Central banks, authors' estimates.

The authors estimate that the Gulf's external portfolio—excluding the private assets of the region's ruling families—fell from almost \$1.3 trillion in 2007 to \$1.2 trillion in 2008. The swing in fortunes of the smaller Gulf states is more extreme: the foreign assets of the governments of Kuwait, Qatar, and the United Arab Emirates—in the authors' judgment—fell from close to \$1 trillion at the end of 2007 to close to \$700 billion at the end of 2008. These estimates are in line with losses at other institutions. Norway's Government Pension Fund Global is down 15 percent this year despite record inflows. Harvard's endowment fell at least 20 percent in the second half of 2008. It is hard to see how the Gulf sovereign funds avoided similar losses. The Saudi Arabian monetary agency by contrast reports that its foreign assets are up by almost \$150 billion. Counting the foreign assets of the Saudi government pension funds that SAMA manages, SAMA's foreign assets rose from \$363 billion to \$513 billion at the end of November. SAMA apparently reports the book value of its foreign assets not their market value, which is estimated to be around \$500 billion. If 20 percent of new securities purchases were directed toward equities, its portfolio might have been worth \$385 billion at the end of 2007 (more than reported) and \$500 billion at the end of 2008 (less than reported). Despite large inflows in 2008, even larger valuation losses on equities reduced the value of SAMA's equity portfolio—though its relatively low exposure to equities kept its losses modest compared to other Gulf funds.

Table 2: Foreign Assets Managed by Selected Oil Exporters

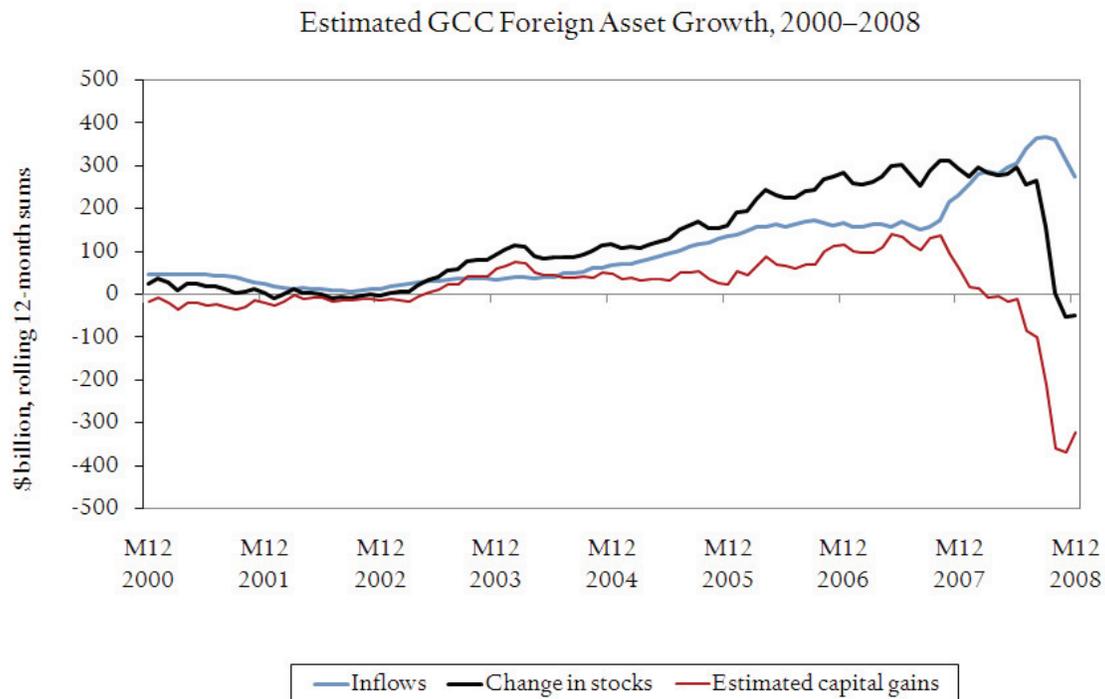
\$billion at the end of the period

		2000	2005	2007	2008f
SAMA including Saudi pensions (estimated market value)		82	201	385	501
Other GCC central banks		25	40	116	84
Large GCC SWFs (e)		214	451	780	615
	o/w ADIA (e)	150	276	453	328
	o/w KIA (e)	63	152	262	228
	o/w QIA (e)		23	65	58
Russia		24	176	476	440
	o/w Stab. Fund		43	157	137
	o/w Wealth fund ⁷				88
Norway		70	253	431	365
	o/w Fx reserves	27	46	60	40
	o/w Gov. fund	43	207	371	325

Sources: National Central Banks, Bloomberg, authors' estimates.

As a result of the simultaneous fall in the market value of the Gulf's foreign portfolio and the price of oil, the Gulf now once again faces budgetary and financial constraints. In 2008, the Gulf Cooperation Council countries likely needed oil to average around \$50 a barrel to cover their import bill if all debits in the current account are counted as part of imports. The "break even" price for the Gulf has increased over time, as budgeted spending and domestic investment rose. If oil remains around \$40 a barrel, the Gulf might need to use \$70 billion of its foreign assets to cover its import bill in 2009—a drawdown that the region's major economies (counting the UAE as a single economy) all can cover comfortably. Even if outright cuts are avoided, budgets may not increase at the same pace as in the past. Most 2009 budgets assume higher spending than 2008 budgets—but this is slightly misleading as actual spending generally exceeded the formal budget in 2008.⁸ At current oil prices, some ambitious domestic investment projects either will need to be canceled or financed by selling existing foreign assets.

Chart 1



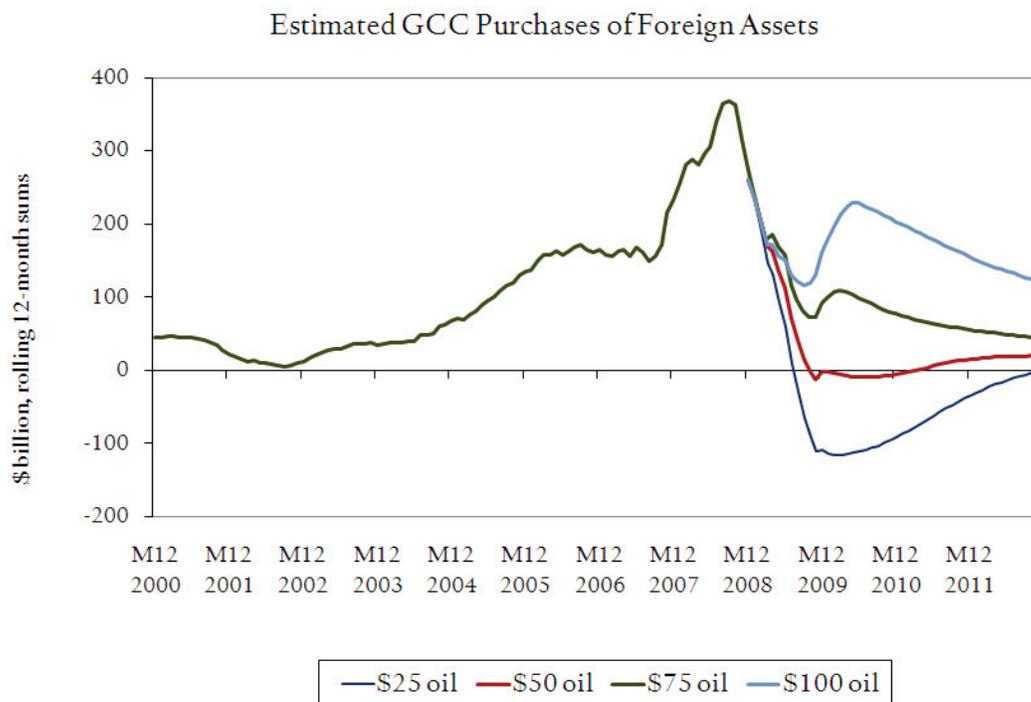
Source: Authors' estimates.

Efforts to support domestic liquidity by placing government deposits with local banks and to support local equity markets—the Kuwait Investment Authority has already indicated that it will invest in Kuwait's stock market⁹—could require additional sales of foreign assets. Many of the region's quasi-sovereign borrowers also face difficulties rolling over their debts.¹⁰ Dubai's financial difficulties are by now well known: Dubai's external debts exceed its external assets. With roughly \$20 billion of its roughly \$80 billion in foreign debt coming due in 2009, Dubai will likely require a significant loan from Abu Dhabi—particularly as it can no longer finance its current account deficit by borrowing from the rest of the world.

Much, though, depends on the price of oil. A \$10 per barrel gap between spending on imports and oil export receipts corresponds with a \$50 billion increase in the region's foreign assets, roughly split evenly between SAMA and the large sovereign funds. If oil averages \$50 a barrel, the Gulf would need to draw on its interest and dividend income to support current levels of imports even in the absence of production cutbacks that would cut into the oil revenue stream. At \$75 a barrel, the GCC would have roughly \$140 billion to add to the foreign assets of their central banks and sovereign funds, almost as much as in 2005, when oil averaged \$53 a barrel. At \$100, the Gulf would once again be flush. Conversely, if oil fell to \$25 a barrel or if maintaining \$50 a barrel of oil required large production cuts the Gulf economies would need to draw heavily on their foreign assets even if they canceled or deferred ambitious investment projects.¹¹ The drain on the Gulf's foreign liquidity needed to cover current spending and imports could reach \$150 billion. The authors' projections are based on the level of oil production that preceded the most recent (December) round of OPEC cuts. If production and prices both fell, oil revenues could actually be smaller—and the need to draw on

accumulated savings to avoid sharp cuts would be higher. Moreover, these projections look only at the current account. A net capital outflow would require additional asset sales (see Chart 2).

Chart 2



Sources: Central Banks, authors' estimates.

At all oil prices—notwithstanding Qatar's high-profile investments in Barclays and Credit Suisse and the Al-Nahyan family's investment in Barclay's (and Manchester City)—the authors would expect the Gulf to be looking to increase the share of its portfolio held in liquid assets in 2009. Kuwait's investment in Dow Chemical may not be the only withdrawn deal. Major Gulf states anticipate the need to provide foreign currency liquidity to domestic institutions and some have already done so. Moreover, the recent highly correlated fall in equity prices and oil prices potentially reminded some funds of the need to hold assets that retain their values during a global economic contraction.¹²

The one possible exception is Saudi Arabia. In 2008, the Saudis were rewarded for holding a dollar-and-bond-heavy portfolio. While the Saudis are unlikely to change, they have a large enough buffer of liquid assets that they potentially could reallocate a portion of their existing portfolio toward "risk" assets.

This paper is organized into three sections. The first section presents the model the authors have used to evaluate the region's sovereign funds—like many financial institutions, the authors have marked to model in the absence of hard information. The authors' model is based on the gap between overall spending and oil export revenues for various countries along with estimates of broad portfolios of major funds. The authors then assume market returns.

The second section presents the details of the authors' backward looking analysis of the growth of these funds. An important conclusion is that ADIA/ADIC never were as large as some analysts claimed. The authors have no doubt their estimates will be off. But, as noted at the outset the authors

hope their model captures the basic dynamics of the major funds over the past few years—and that countries that believe the authors have failed to capture the basic dynamics of their funds will enhance their transparency to prove the authors wrong.

The third section presents the results of the authors' forward looking analysis—examining the impact of \$25, \$50, \$75, and \$100 oil on the Gulf's foreign asset growth. If oil averages \$75 a barrel over the next five years, the portfolio of the GCC official sector would rise to \$1.7 trillion. If oil averages \$100, it will reach \$2.1 trillion.¹³ Conversely, if oil averages \$50 a barrel, most Gulf countries would need to curtail spending and planned investment projects to avoid a sustained drawdown of their foreign assets—continued interest and dividend payments would keep external assets relatively constant with the region's portfolio ending 2012 with \$1.4 trillion. At \$25 a barrel, the erosion of assets is significant, despite continued returns on existing assets—the Gulf's external position would fall to just over \$1 trillion.

An appendix presents the authors' detailed assumptions about individual funds. While the authors have tried to calibrate their model to the available data, the Gulf's ongoing lack of transparency required that the authors make a number of critical assumptions. If those assumptions are off, the authors' analysis will be off.

Authors' Model

The authors tried to make up for the lack of information about the size and growth of the Gulf's funds by modeling the new inflows into major sovereign funds and the performance of their portfolios.

The authors start by assuming that the balance of payments data offers a basis for estimating the oil surplus that is transferred to the region's sovereign funds. The authors assume that most of the difference between a country's oil export earnings and its imports—defined broadly to capture all outflows in the current account—is channeled into the region's central banks and sovereign funds. Deriving estimates from the fiscal data tends to yield similar results, largely because there is a direct correlation between government spending and imports. The authors calibrated the model using the International Monetary Fund's (IMF) balance of payments data, which offers data on total transfers to sovereign funds at both the national level and the regional level. The authors also drew on data from Norway to help calibrate the authors' model. Norway's transparency means that it provides a useful baseline even if its asset allocation and spending patterns have historically differed from those of the Gulf countries.

Table 3: Estimated Inflows to GCC SWFs (All \$billion unless otherwise specified)

	Average Oil price (\$ per barrel)	IMF "official outflows" for the Middle East ¹⁴	Current account surplus of Qatar, UAE, and Kuwait	Assumed inflows into ADIA, QIA, and KIA
2003	28.9	24.2	23.0	19
2004	37.8	33.7	35.1	33.7
2005	53.4	24.4	76.0	62.4
2006	64.3	66.4	104.8	82.9
2007	71	93.9	108.5	88.9
2008f	97	147	182.3	150.3

Sources: IMF, Bloomberg, authors' estimates.

The authors' baseline assumption is that most GCC countries direct nearly all of their current account surpluses to each country's sovereign fund/central bank. However, the authors have adjusted the model if the available data suggests the accumulation of foreign assets by the sovereign fund/central bank lags a country's current account surplus. For example, the authors assume that SAMA only receives 75 percent of Saudi Arabia's oil surplus.¹⁵

The authors' methodology only works for funds that are financed primarily by oil revenues rather than borrowing or asset sales—funds that in some sense evolved out of the fiscal reserves of various countries. The authors consequently have left Dubai's various funds out of their primary analysis. The authors also have not tried to extend their analysis to some of Abu Dhabi's smaller funds—

particularly those funds that invest as much inside as outside the Emirates. But for every rule there is an exception. One of Abu Dhabi's new funds—the Abu Dhabi Investment Council—was formed out of ADIA and the authors' estimates for ADIA should now be considered an estimate for the combined foreign assets of ADIC and ADIA.

The model for the GCC consequently includes the GCC central banks, SAMA's foreign assets (and the foreign assets of the Saudi pension funds that SAMA manages), and the assets of the three large sovereign funds—ADIA/ADIC, KIA, and QIA. It doesn't capture the smaller sovereign funds, or the family offices of the region's royal families. While the willingness of some smaller funds to use leverage, make concentrated bets, and engage in joint ventures means they are significant players in financial markets, the larger investment funds still dominate the region's global asset allocation. Funds like Abu Dhabi's Mubadala, Dubai International Capital (DIC), Istithmar, and Bahrain's Mumtalakat manage around \$30 billion to \$40 billion in external assets—less than a year's inflows into a large fund like KIA or ADIA/ADIC when oil prices are high.

Once the authors have estimated the oil export revenue available to each fund, their model allocates the new inflow across assets in a way that reflects their best guess about the asset allocation of the GCC sovereign funds.¹⁶ The authors assume that the Gulf's sovereign funds, unlike most central banks, do not rebalance their portfolio. But the authors did adjust their assumptions about the allocation of new inflows over time if press reports suggest a change in the fund's strategy, including a desire to increase a fund's allocation toward an asset class. For example, Kuwait's allocation to risk assets—including private equity and emerging economies—is assumed to have increased in 2005.

The authors' analysis is based on the following assumptions:

Central bank reserves do not have any equity exposure, and 80 percent or more of their assets are in dollars.¹⁷

Twenty percent of SAMA's foreign securities portfolio is in equities (which it does not mark to market) and 80 percent is in bonds—and the dollar accounts for 80 percent for its total portfolio of non-reserve foreign assets. The assets managed by SAMA on behalf of Saudi pensions have a similar asset allocation.

The major sovereign funds all have a large allocation to global equities (50 percent to 60 percent) and another 20 percent to 25 percent in alternatives (hedge funds, real estate, and private equity).¹⁸ Kuwait's portfolio is more conservative than the other funds though its diversification (increase in exposure to equities, alternative and emerging market assets) has been on course since 2005. The sovereign funds consequently only have 15 percent to 30 percent of their portfolios in bonds.

Most funds are assumed to have slightly less than 50 percent of their assets in U.S. dollars, implying, among other things, that KIA and QIA diversified away from the dollar in recent years.¹⁹ ADIA is assumed to have diversified away from the dollar in the past, and to have more exposure to emerging economies than the other funds.

Finally, in the absence of any information about the fund's actual returns, the authors assumed that the funds did no better (or worse) than an appropriate benchmark.²⁰ Some funds, such as ADIA, were rumored to have had very high returns in 2005–2007. The authors' model would not capture above-market gains—or any relative underperformance. In fact, the authors' analysis might overstate paper losses in illiquid private equity investments by requiring the funds to assume those losses today, frontloading losses that they might not need to take until later—or at all.²¹ The authors' methodology for estimating the returns on private equity investments may also be off, as the authors assume that private equity's use of leverage magnifies both gains and losses from equity market moves.

How Have the GCC Funds Fared Since 2000?

This model allows us to look back at the historic performance of Gulf funds as well as to project their future growth under different assumptions. The authors' historical analysis requires making two critical assumptions: ADIA ended 1999 with around \$150 billion of foreign assets, and KIA ended 1999 with around \$55 billion—a total that reflected Kuwait's need to draw on its external assets to finance reconstruction after the 1991 Gulf War. These estimates were reported in the press—and seem consistent with cumulative current account surpluses of Kuwait and the UAE from 1980 on (no data is available for the 1970s).

The first three years of this decade did produce major changes in the Gulf's external assets. The rise in oil prices in 2000 seemed large at the time, but less so now. On average, oil prices remained relatively low. Slumping global equities impacted ADIA's portfolio, but the capital losses were manageable. The authors' model implies that its assets under management never fell below \$130 billion. By the end of 2002, the authors estimate that ADIA had around \$140 billion and Kuwait around \$70 billion. In 2003, 2004, and 2005, the rise in oil prices and recovery in global equities generated strong growth in both funds—by the end of 2005, the authors estimate that ADIA had about \$275 billion and KIA around \$150 billion. QIA—which was founded in 2004—rose to \$20 billion or so.

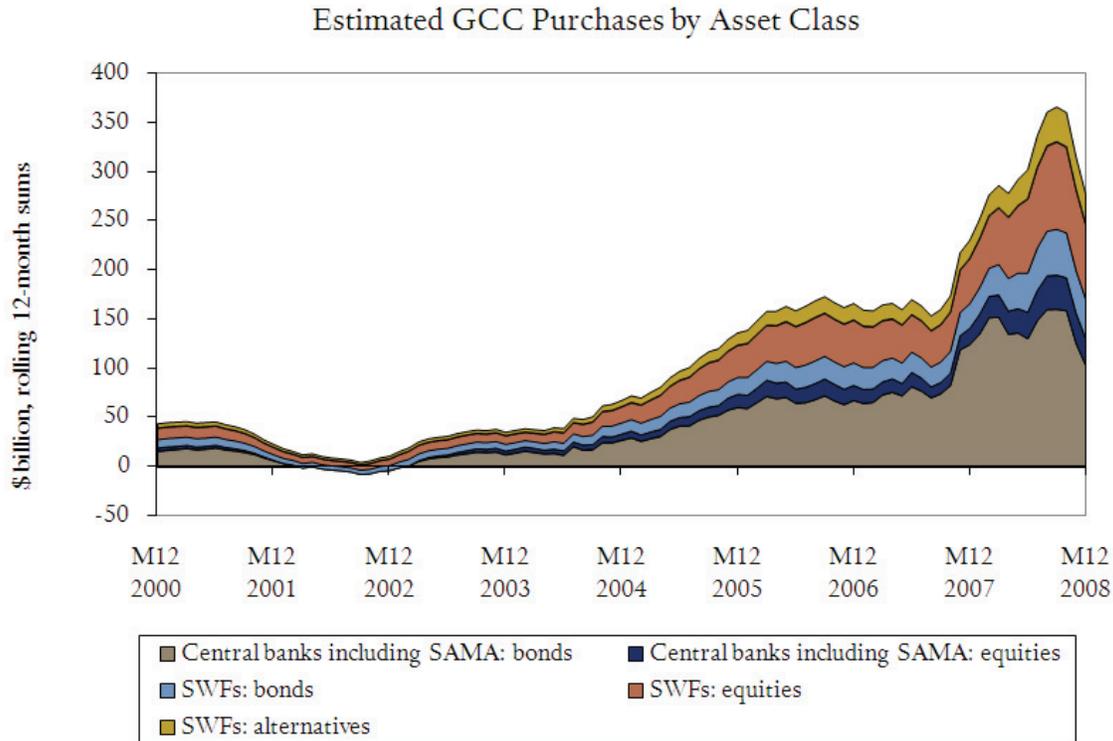
2006 and 2007 were the golden years for the sovereign funds. An unanticipated surge in oil prices and strong global equity markets rapidly increased the funds managed by ADIA and KIA. The authors estimate that ADIA's funds under management rose from \$285 billion in 2005 to \$400 billion at the end of 2006 and \$475 billion at the end of 2007. KIA's assets reached \$275 billion and QIA reached \$65 billion—for a total of around \$800 billion. This made the large Gulf funds among the biggest sovereign investors in a host of risky assets—as no other large pool of public money had a comparable appetite for risk.

There are two ways of disaggregating the flows associated with the expansion of the GCC's sovereign funds and central bank reserves: by asset class and by currency.

ASSET ALLOCATION

The authors' analysis suggests that the Gulf's outward purchases were split roughly fifty-fifty between purchases of fairly safe bonds and risk assets—whether equities or “alternatives.” The increase in the Gulf's purchases of bonds and similar safe assets reflects the growth of SAMA and the expansion of the foreign exchange reserves of the Gulf central banks (see Chart 3). But there is also little doubt that from the end of 2004 to mid 2008, large inflows into the region's sovereign funds combined with an increase in the risk appetite of the KIA to produce a surge in Gulf demand for risk assets. While the large Gulf funds—QIA is an exception—generally do not use leverage directly, they often invest in leveraged intermediaries.²² That magnified their impact on the market, as they provided the “equity” for larger investments.

Chart 3



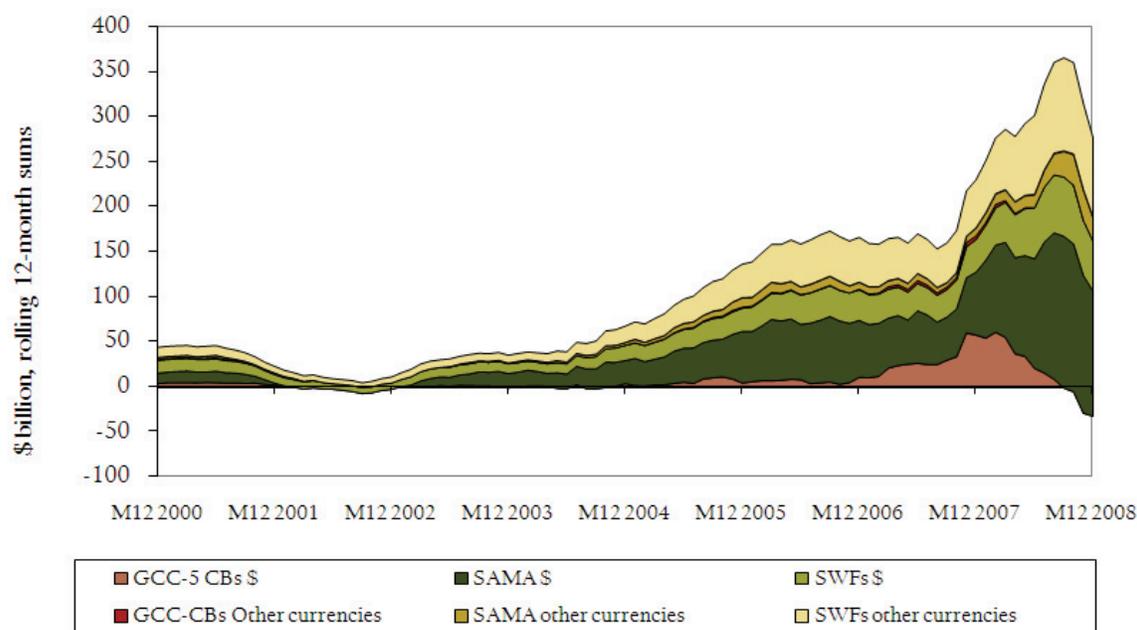
Sources: Central Banks, SAMA, authors' estimates.

CURRENCY COMPOSITION

From 2003 to 2006, the authors estimate that the dollar's share of GCC purchases decreased slightly as the major sovereign funds diversified away from U.S. assets and toward the euro, pound, and emerging market assets. However, the authors assume that the majority of the region's purchases continued to be directed toward the dollar zone, largely because the authors believe that Saudi Arabia and the Gulf central banks maintained a higher dollar share in their portfolios (80 percent if not more; 95 percent of UAE's reserves remain in dollars)²³ and thus continued to be disproportionate buyers of dollar assets. Market estimates suggest that SAMA's dollar share ranges from 75 percent to 85 percent, much higher than the other GCC investment funds, though lower than some other GCC central banks. Of all the assumptions that the authors make, none is more critical than the assumption that the dollar share of SAMA's portfolio (including the Saudi pension funds) is around 80 percent.²⁴ (See chart 4).

Chart 4

Estimated GCC Purchases by Currency



Source: Authors' estimates.

This analysis produces two intriguing results. First, SAMA dominates the Gulf's purchases of dollar assets—and as its portfolio remains (as best the authors can tell) fairly conservative, bonds likely dominate the Gulf's purchase of U.S. assets. Bond purchases are not fully reflected in the TIC data, which the authors believe understates Saudi Arabian purchases because of SAMA's use of private sector intermediaries outside of the country. Conversely, a much larger share of the Gulf's purchases of European assets is directed into various "risk" assets.

Second, the surge in speculative inflows to the Gulf in late 2007 and early 2008—a surge tied to bets that the Gulf would not be able to sustain its dollar peg when oil was high and the dollar was weak—offset any diversification by sovereign funds out of the dollar over the course of 2007. The GCC's total demand for dollars remained strong during the period when the dollar was under pressure. These capital flows have now reversed, with most of the speculative capital having been withdrawn. The UAE's central bank reserves rose by about \$50 billion between the first quarter of 2007 and the first quarter of 2008 and then fell by over \$30 billion during the second and third quarters of 2008²⁵—adding to the its current liquidity squeeze.

The total assets of the Gulf's sovereign funds and central banks likely peaked at over \$1.4 trillion in the second quarter of 2008 (including the foreign assets of Saudi pension funds managed by SAMA). They subsequently have fallen to around \$1.2 trillion with the fall in the market value of the assets managed by the large sovereign funds accounting for the entire decline. SAMA took losses on its equity portfolio—but those losses were modest and more than offset by the enormous inflow associated with high oil prices in the third quarter. Indeed, the rapid growth of SAMA's foreign deposits in the third quarter of 2008 suggests that SAMA reduced its equity purchases—and thus its ex-

posure to the fourth-quarter slump in global equities could be smaller than the \$60 billion the authors' model indicates.²⁶

Even with the recent equity market sell-off, the assets under management of GCC sovereign funds and central banks increased fourfold from 2000 to 2008. The \$950 billion increase in official foreign assets is about equal to the GCC's cumulative \$900 billion current account surplus over the past eight years. In fact, the increase in the foreign assets of Kuwait and the emirates is smaller than their cumulative current account surpluses. Both lost large sums by investing heavily in global equities when oil prices and equity markets were at their recent peaks. In the first half of 2008, the U.S. and Europe overpaid for the Gulf's oil and the Gulf overpaid for U.S. and European equities.

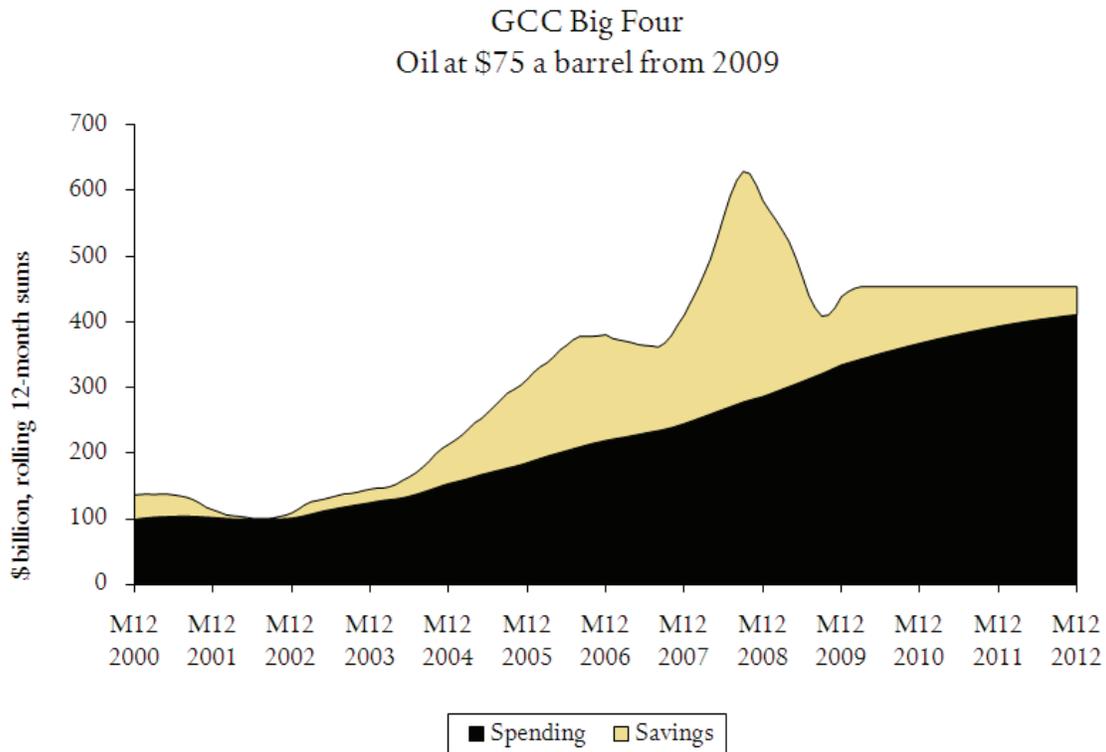
Looking Forward

Each of the four scenarios (based on oil prices of \$25, \$50, \$75 or \$100 a barrel) assumes modest returns on the equity and alternative asset holdings, constant across funds. The authors do not assume that the Gulf's asset allocation will change in the future. As the authors assume only modest returns consistent across funds, the main driver of asset growth is the size of the region's oil wind-fall—which depends on the oil price and spending levels.²⁷ All scenarios assume modest, but positive, returns on the Gulf's equity and alternative asset portfolios and stable exchange rates.

Even if oil stabilizes at \$75 a barrel over the next five years, the pace of foreign asset accumulation in the Gulf will slow substantially. Based on current trends, the increase in imports associated with higher spending would push the break-even oil price up to \$75 a barrel by 2010 or 2011. However, the authors assume that lower oil prices will rein in some of the region's development plans—and that the oil price needed to cover the region's imports will only rise to about \$70 a barrel over the next five years (see Chart 5)

Under these assumptions, the major Gulf funds—including SAMA—would receive \$130 billion in 2009, \$120 billion in 2010, and \$90 billion in 2012. The authors assume that the reserves held by GCC central banks reserves will be constant.

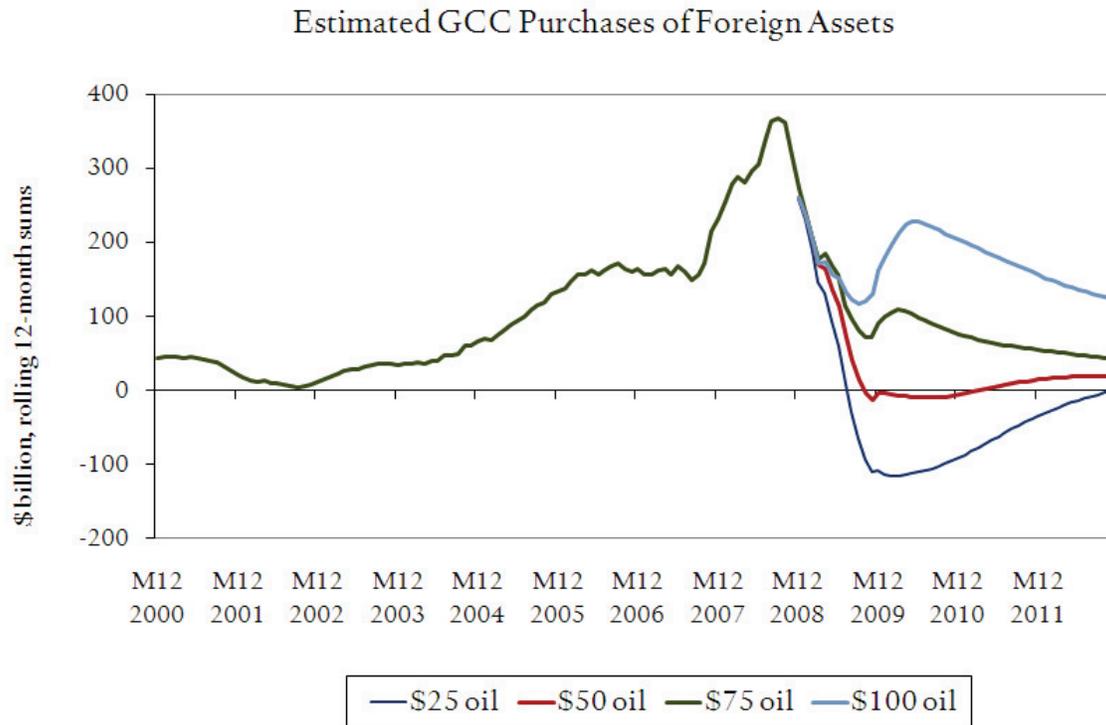
Chart 5



Source: Authors' estimates.

The size of these flows hinges critically on the price of oil. If oil is \$50, most countries end up drawing on their funds to support current levels of spending. At \$25 a barrel, the erosion of assets is more significant despite an assumption that spending will sharply decline in 2010 and 2011 as Gulf governments adjust to a much lower oil price. If oil is \$100, by contrast, far larger sums are available to invest abroad as well as at home (see Chart 6).

Chart 6

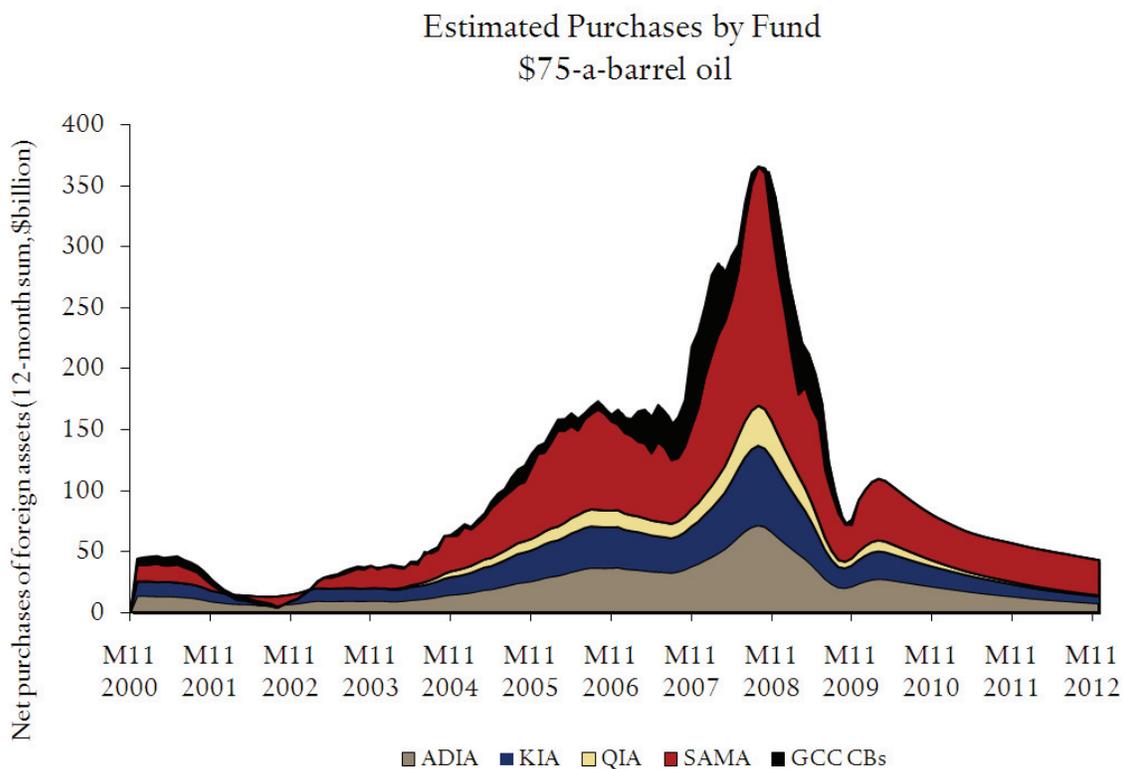


Source: Authors' estimates.

These assumptions allow us to estimate the flows into different funds—with the size of the flows a function of assumed levels of oil production, the oil price, and the assumed level of spending on imports.

The distribution of these flows across currencies and assets do not vary with the price of oil—as the authors' assumptions about the asset composition of the various funds are independent of oil price. For example, if oil averages \$75 in 2009, the authors estimate that \$60 billion of the \$100 billion total would flow into U.S. dollars, \$25 billion into European assets, \$5 billion into Japanese assets, and \$5 billion into emerging assets. SAMA—as one would expect—accounts for the lion's share of flows into dollars (see Chart 7).

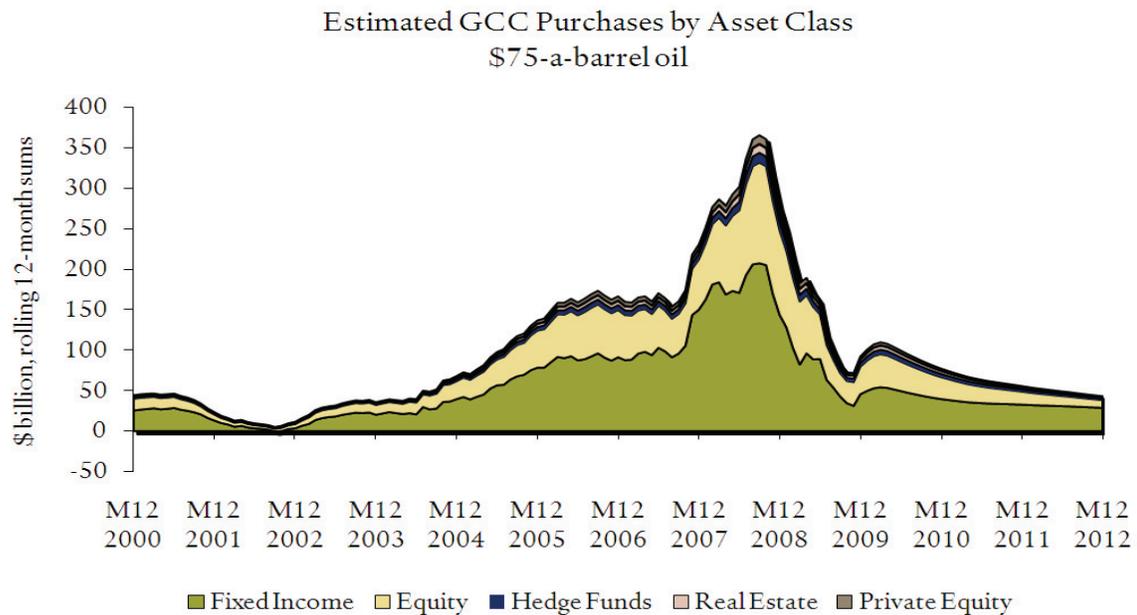
Chart 7



Source: Authors' estimates.

Similarly, if oil averages \$75, the Gulf would allocate \$34 billion to equities, \$45 billion to bonds, \$5 billion to private equity, \$4 billion to real estate, and \$3 billion to hedge funds. SAMA accounts for the majority of the bond purchases, while ADIA and KIA combine to generate the majority of equity purchases (see Chart 8).

Chart 8

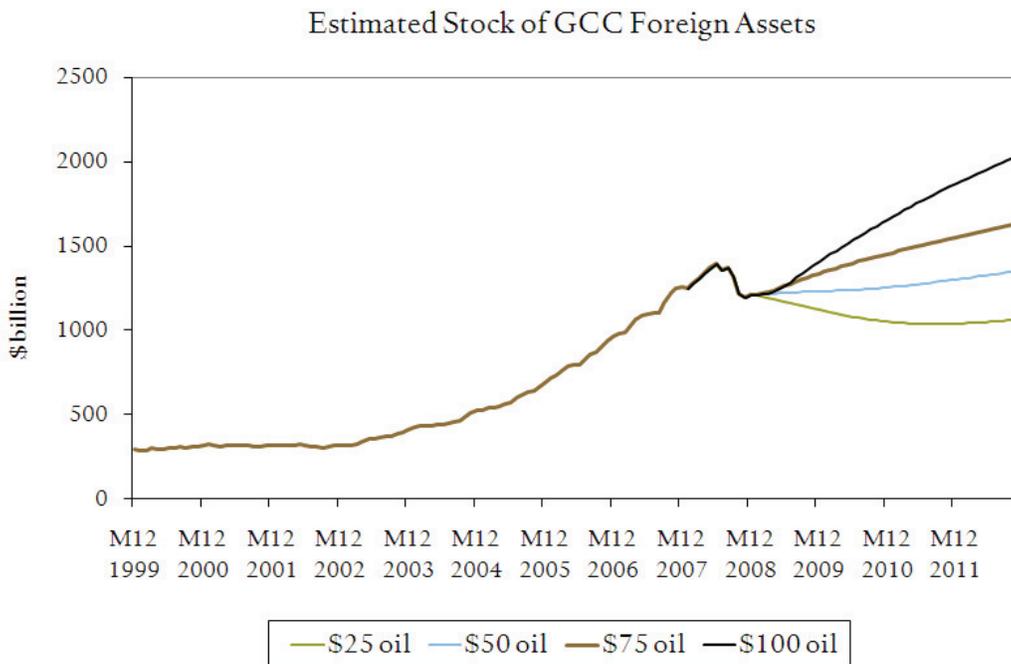


Source: Authors' estimates.

These graphs are meant to be illustrative rather than precise—a major change in the currency or asset allocation of SAMA, ADIA, or KIA would have a large impact on flows. For example, inflows into equities and alternatives might fall in 2009 if the large sovereign wealth funds increased their allocation to government bonds.

If oil averages \$75 a barrel over the next several years, the Gulf's external assets would rise to \$1.8 trillion. Much of the increase comes not from the oil surplus—which quickly dwindles—but rather from interest income, dividend payments, and capital gains on the Gulf's existing assets. The authors essentially assume that spending and investment ratchet up to a level that absorbs the region's ongoing oil windfall but doesn't require tapping into the income stream from the region's stock of foreign assets (see Chart 9).

Chart 9



Source: Authors' estimates.

If oil averages \$50 a barrel for the next five years, many countries may actually start drawing on their savings in 2009. Doing so will not necessarily lead to a rapid depletion of the funds, as the authors estimate that the interest and dividend income of the funds—together with capital gains—produce annual growth of around \$70 billion a year even in the absence of new oil inflows.²⁸ If oil averages \$25 a barrel almost all of such income will be spent and some of the funds' principal might be depleted (or the governments may take on offsetting debt) to meet spending needs. Qatar's fund would be particularly vulnerable to withdrawals as its investment income will be smaller than that of the larger funds. Qatar though may offset a reduction in oil revenues with increased natural gas production over the next five years.

In contrast, if oil averages \$100 a barrel or more over the next five years, the GCC's assets will resume their rapid expansion and expand to \$2.2 trillion by 2012. Even so the region would fall well short of generating the massive sovereign funds implied by those who project that the assets under management by sovereign funds would rise to \$10 trillion to \$12 trillion in 2012.²⁹ No matter what the oil price, the authors assume that overtime spending would approach revenues, although the authors assume a large, if narrowing surplus for many years if the oil price averages \$100 a barrel.

Changing Places: Saudi Arabia and the Emirates

2008 has generated a remarkable reversal of the relative fortunes of Saudi Arabia and the United Arab Emirates. At the end of 2007, the authors estimate that the Emirates had close to \$600 billion in foreign assets while Saudi Arabia had about \$350 billion in disclosed assets. If, as many believe, SAMA's reported assets aren't marked to market, its reported total overstates SAMA's true size—as it would leave out the capital gains (and recent losses) on SAMA's equity portfolio. ADIC/ADIA and the UAE central bank combined for an estimated \$550 billion at the end of 2007 and the foreign assets of some smaller funds left out of the main analysis account for another \$40 billion.

Both totals leave out the substantial private assets of the al-Saud, al-Nahyan, and al-Maktoum families. They also leave out the external debts (and assets) of both countries' private and quasi-private firms. They nonetheless are indicative of the surge in Abu Dhabi's assets, generated by ADIA's aggressive management of Abu Dhabi's foreign assets. In 2005, 2006, and 2007 the capital gains on ADIA's portfolio accounted for more of its growth than oil revenues. The Saudis' more conservative approach to fund management had generated much more modest gains. But with far less oil than the Saudis, Abu Dhabi had a comparable if not larger (visible) external portfolio, a more dynamic skyline, and far more of the attention of the financial world.

Among the other emirates, Dubai never had much oil—and never had a comparable stockpile of foreign assets. But its aggressive expansion created global buzz—and dramatically increased its international profile. Dubai's external borrowing—and to a lesser extent the external borrowing of some of Abu Dhabi's smaller firms and state enterprises—meant that the Emirates' net foreign asset position wasn't quite as favorable as its gross position. The phrase “Shanghai, Mumbai, Dubai, or goodbye” irritated both Abu Dhabi and Riyadh.

However, in 2008, the relative financial position of Saudi Arabia and the Emirates reversed. ADIA's equity heavy portfolio more than gave back its bull market gains. SAMA's bond-heavy portfolio retained its value. Moreover, SAMA received a huge windfall from Saudi Arabia's large fiscal and current account surplus. By the end of 2008, SAMA's formal portfolio likely exceeded the combined portfolio of ADIA and ADIC (ADIC was split off from ADIA in 2008). If the foreign assets of Saudi pension funds managed by SAMA are added to SAMA's own portfolio (including reserves), it now manages over \$500 billion—a sum comparable to the authors' estimate for ADIA's portfolio at its peak in mid 2008.

Saudi Arabia was able to generate a large increase in its foreign assets in 2008 in part because it has been slower to ramp up spending and investment than the smaller Gulf states. Furthermore, its oil production is over two times greater than that of Kuwait, the UAE, and Qatar combined. Its larger population implies that its oil revenue is spread across a larger base—something that may limit its future savings. But on current trends, it is likely to remain the Gulf's largest fund for some time. Moreover, the Saudis' current portfolio is heavily concentrated in both dollars and the fixed income market—a decision that served it well in 2008. A major change in the Saudis' asset allocation is now unlikely – but if it were to happen it could be quite significant: as it implicitly has a greater capacity to deliver a shock than a more balanced and diversified portfolio. In the near term, though, a realloca-

tion of the major sovereign funds back toward government bonds seems more likely than a major reallocation of SAMA's portfolio away from bonds.³⁰

The Saudi position differs from the UAE in another respect: the Saudi "private" sector wasn't a major net borrower from the rest of the world, while private and parastatal borrowers in the UAE have racked up \$100 billion of external debt. Dubai in particular currently faces a financing squeeze. Its government and ruling family-sponsored firms have \$80 billion in debts. Investment vehicles like Istithmar Global and DIC have invested abroad—but their external investments are illiquid and likely have suffered significant losses recently.³¹ Furthermore, these vehicles were funded from the proceeds of Dubai's other investments, including the domestic property market, where prices are falling.³² There is little doubt that "Dubai Inc"—defined as entities owned by the government and ruling family—has more external liabilities than external assets, and far more short-term external debts than liquid external assets. Moreover, Dubai has relied on a roughly \$20 billion annual increase in its external debt to cover an ongoing current account deficit: it consequently needs more financing than implied by the amount of its maturing external debt. Abu Dhabi didn't quite take on as much debt as Dubai, but its private and quasi-private firms were also significant net borrowers.

The financial health of many Emirati companies consequently hinges on their ability to draw on Abu Dhabi's external assets—as the liquid external assets of Dubai, Inc are likely to be too small to cover Dubai's 2009 financing need. The UAE central bank has guaranteed the external liabilities of all Emirati banks, a decision that effectively allows banks in Dubai to draw on the resources of Abu Dhabi. The UAE central bank has provided funds to the domestic banking system to address its liquidity shortage – though high penalties deferred some banks from availing themselves of the funds. Additional support is likely to be needed next year, which may lead to a further reduction in the assets managed by the Abu Dhabi Investment Authority. ADIA has shied away from investments in the Emirates and indeed investments in the region, viewing itself as a pure portfolio manager that seeks (not always successfully) the highest risk-adjusted return—not a fund that supports domestic or regional economic development. Other, smaller funds consequently seem to be more likely to manage any "Dubai" assets Abu Dhabi receives in exchange for financial support. These funds like Mubadala may also continue to attract funds to support their domestic economic development aims.

The overall story could not be more different from 2007. A global liquidity crisis has favored those countries that kept their foreign assets in safe, liquid dollar securities—not those countries that borrowed aggressively or that invested aggressively. The slump in oil prices equally has favored countries with more restrained domestic spending and investment plans—and could require that some more high-flying parts of the Gulf to cut back. An important risk management lesson is already clear: if your export revenue stream is correlated with global growth, not all of your wealth should be invested in assets that are also likely to be highly correlated with global growth. For funds with a stabilization mission, the value of an asset in bad times matters far more than its value in good times.

Appendix: Sovereign Wealth Funds

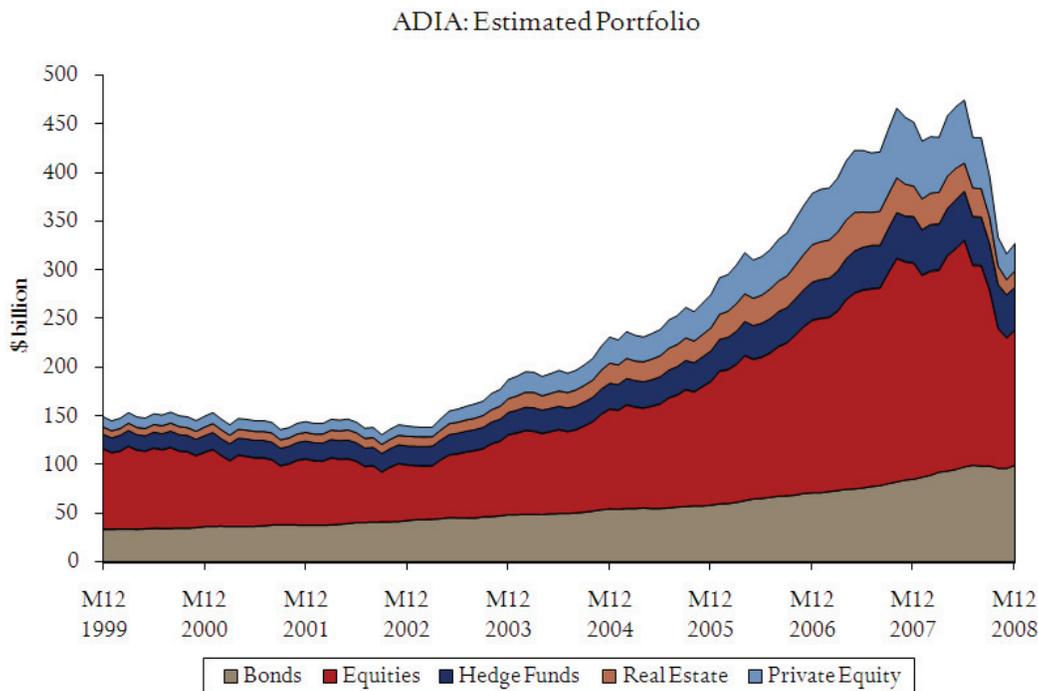
ABU DHABI INVESTMENT AUTHORITY (ADIA)

Published estimates that ADIA—by all accounts the largest sovereign fund—managed almost \$900 billion before the recent market slump almost certainly overstate ADIA’s true size. The authors’ model suggests ADIA’s assets were closer to \$500 billion at the end of 2007—an assumption supported by statements from Abu Dhabi officials and the IMF’s Middle East division chief, Mohsin Khan³³ (see Chart 10).

The authors’ estimate assumes that ADIA had assets of around \$150 billion in 2001 (as one contemporary source suggests)³⁴, that ADIA received the bulk of Abu Dhabi’s oil surplus and that ADIA had index-based returns on a portfolio with a heavy allocation toward equities and emerging markets. Given that ADIA reportedly had high returns on its portfolio in 2005–2007, the authors’ estimate could understate its returns and assets under management, just as it might overstate more recent losses.

The authors’ estimate for ADIA encompasses the foreign holdings of the Abu Dhabi Investment Council, which was created in 2007 and received all of ADIA’s regional and domestic holdings. The council and Mubadala—a fund that has a mandate that includes investments to help develop and diversify Abu Dhabi’s economy—now also receive a share of Abu Dhabi’s surplus.³⁵

Chart 10



Source: Authors' estimates.

ADIA's large allocation to equities, especially those in Europe and emerging markets³⁶, contributed to its high returns in 2005–2007. Returns on its equity investment were thus the largest source of ADIA's asset growth from 2003 to mid 2007. However, since mid 2008 losses on its equity and alternative assets offset the oil windfall. The authors estimate that the assets under management of ADIA and ADIC fell by about \$140 billion in 2008.

KUWAIT INVESTMENT AUTHORITY (KIA)

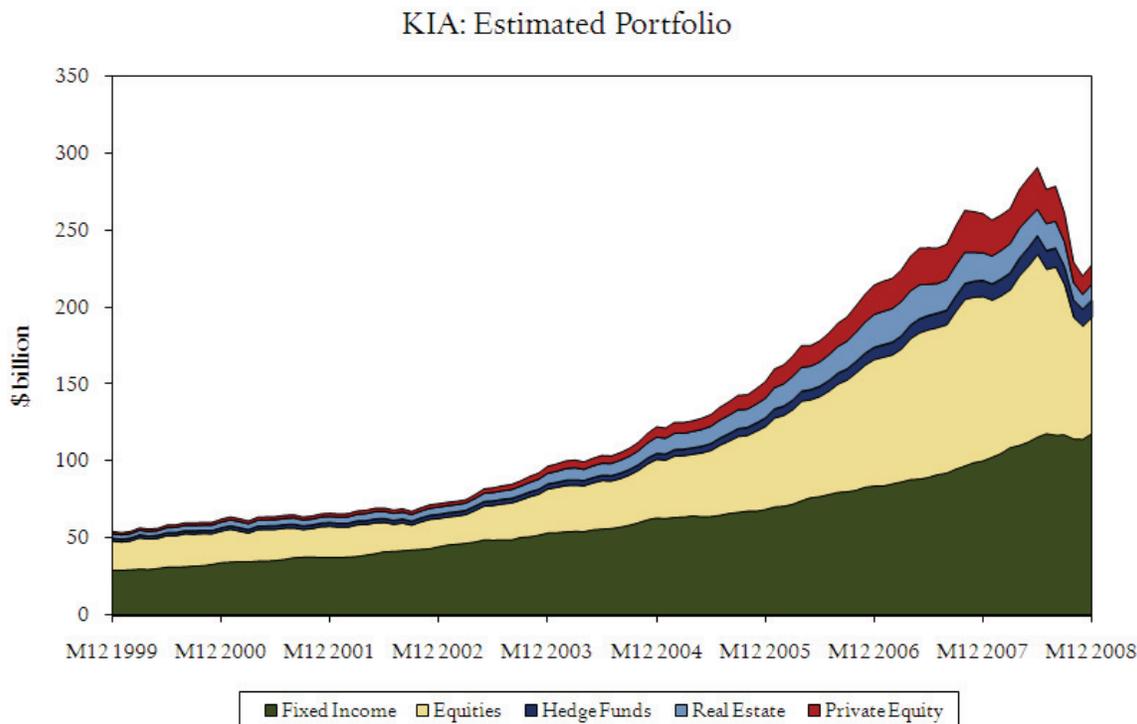
KIA manages the funds of Kuwait's Fund for Future Generations (FFG) and its general reserve fund, which together exceeded \$260 billion in March 2008 (see Chart 11). With KIA's heavy exposure to equities, it, like ADIA, also suffered significant losses. The FFG, which invests primarily abroad in equities and alternative assets, managed about \$213 billion. The reserve fund, which includes some domestic property and equity investments, managed about \$40 billion. Kuwait's FFG legally receives at least 10 percent of Kuwait's revenues from oil. In practice, it likely has received far more in recent years, as Kuwait's oil revenues have exceeded its domestic needs and the reserve fund was still repaying the debt to the FFG incurred during and after the Gulf war. Although Kuwait has been one of the most fiscally conservative GCC countries, it rapidly increased spending in 2007 and 2008. Recent estimates suggest its budget may require \$75 a barrel to balance if the needed contributions to recapitalize the social security system are counted and between \$50 and \$55 a barrel if such contributions are deferred.³⁷ Meanwhile, KIA has committed to further investments in the domestic stock market.

While Kuwait's fund is the oldest in the GCC, having been founded in 1953, it diversified its assets away from conservative U.S. holdings only recently. Its director, Bader Al Sa'ad, indicated that he

wanted to model KIA's asset allocation on university endowments like those of Yale.³⁸ The authors consequently assume that KIA increased its holdings of equity, alternatives, and exposure to emerging markets while reducing its U.S. fixed income portfolio. KIA's equity portfolio targets are based on a region's share of global gross domestic product—though its stakes in Daimler and BP have historically made it overweight Europe. In 2008, its purchases in U.S. financial institutions increased its exposure to the United States.

As a result, it likely entered into the recent asset market slump with an asset allocation approaching that of ADIA but retaining a higher bond allocation—it too suffered (albeit slightly lower) losses in 2008.

Chart 11



Source: Authors' estimates.

Kuwait's fund also manages a local equity portfolio—one that has increased recently. The authors haven't explicitly modeled this portion of its portfolio and consequently may have understated KIA's losses. In the near term, Kuwait plans to invest more of its assets at home and thus will reduce its foreign holdings—it recently announced creation of an equity stabilization fund of at least \$5 billion and KIA already acted as a purchaser of last resort for new equity issued by Kuwait's Gulf bank.³⁹

QATAR INVESTMENT AUTHORITY

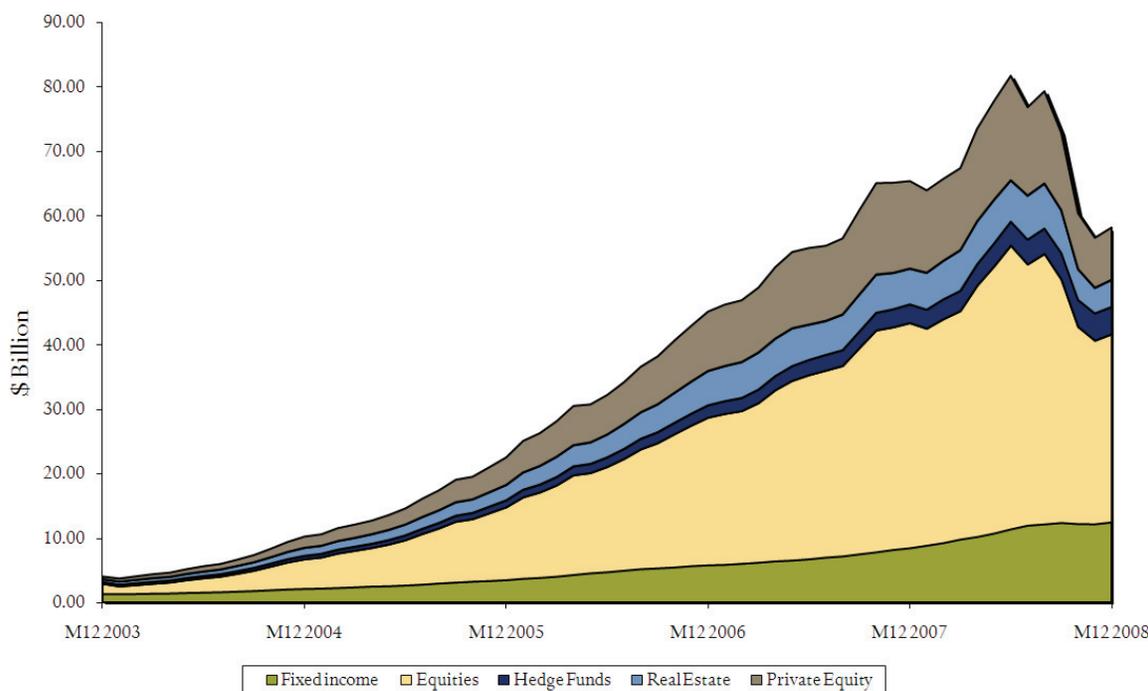
Founded in 2004, the Qatar Investment Authority is the newest and smallest of the major GCC sovereign funds. Qatar exports less oil than Abu Dhabi or Kuwait, but increasingly is poised to supplement its oil export revenue with revenue from its large natural gas fields.

Qatar has tried to scale up its assets quickly and seems to have been willing to take some of the highest risk bets. It has a high rate of return target of around 15 percent and has not shied away from either the use of leverage or making large, concentrated bets. For example, it continued to invest in European banks (Credit Suisse and Barclays) after most other sovereign funds withdrew. QIA has had a dollar share of around 40 percent since at least 2005 with European assets likely making up most of its portfolio. Many of its flagship investments have been in the United Kingdom—and in several recent cases, the private fund of the Sheikh Hamad bin Khalifa Al-Thani has invested alongside QIA.⁴⁰ In the long term, QIA indicated that it intends to increase its holdings of Asian equity and property.

QIA's willingness to take on leverage and a concentrated portfolio may mean it was harder hit than other funds—several of its co-investments relied on rollover financing and it may have had to inject more capital or walk away from some investments. Furthermore, its exposure to the UK property markets and listed companies in the UK increased its portfolio losses. However, the prospect of increasing the natural gas output may boost inflows to Qatar in the next three to five years even if the gas price remains subdued.

Chart 12

QIA, Estimated Portfolio



Source: Authors' estimates.

In many ways, the authors' methodology is better suited to evaluating more conservative funds that have large, diverse portfolios that can be reasonably assumed to have matched the performance of the broad stock index than to evaluating the performance of a fund like the Qatar Investment Authority. The authors' estimates for QIA (see Chart 12) consequently are subject to an unusually large margin of error.

SAUDI ARABIA MONETARY AGENCY

SAMA is widely considered to be the most conservatively managed large Gulf fund, with a portfolio closer to a classic central bank reserve portfolio than to a typical sovereign wealth fund. It is probably better understood as a stabilization fund than a wealth fund. In addition to managing the government's reserves and its non-reserve foreign assets, SAMA manages the foreign assets of the Saudi government pension funds—a total of over \$500 billion at the end of 2008 (see Chart 13).

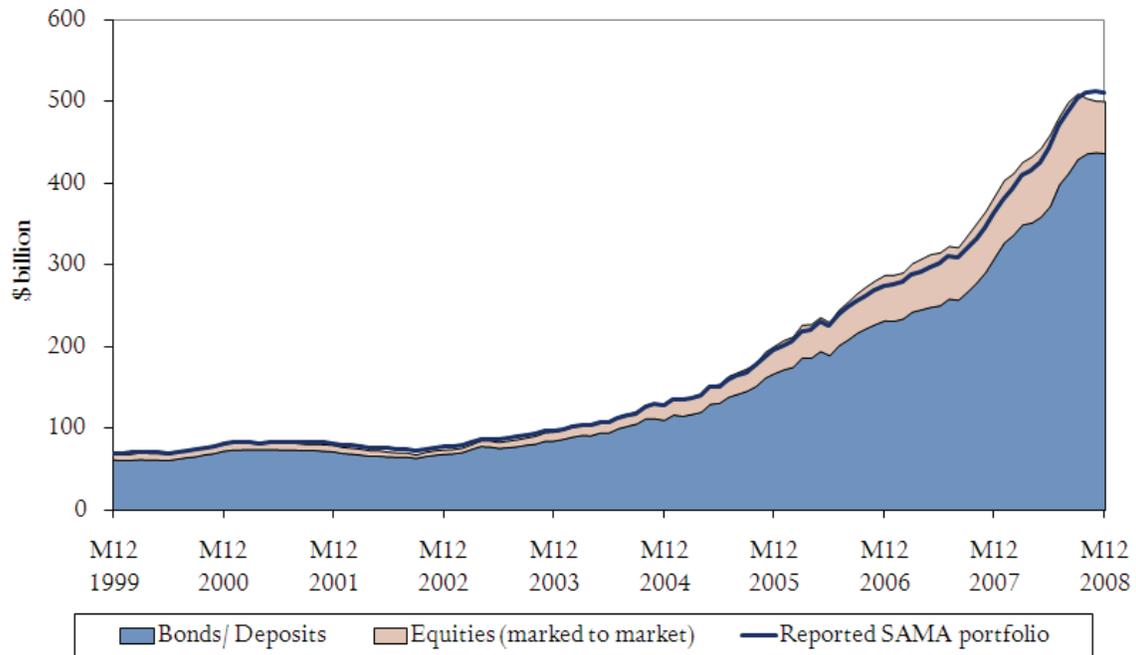
It is also the most transparent of the large funds, reporting—with a monthly lag—its total non-reserve foreign assets (and the total foreign assets of the government pension funds) which totaled over \$400 billion and almost \$70 billion respectively at the end of November 2008. SAMA also held around \$32 billion in foreign exchange reserves. SAMA discloses the size of its security portfolio (as well as the size of its deposits in the international banking system)—but not the currency composition of its portfolio or the bond/equity split of its security portfolio. The authors consequently know that SAMA increased the share of its assets in deposits over the course of the third quarter.

The authors have assumed that 80 percent of SAMA's assets are in dollars and that 80 percent of its securities portfolio has been invested in government bonds, with the remainder in equities. The strong growth in SAMA's foreign assets in the third quarter of 2008 and continued growth in SAMA's portfolio in October is hard to square with a large allocation to either the euro/pound or to global equity markets—though it is possible that the sheer scale of the oil windfall in the third quarter overwhelmed equity market losses.

The most likely explanation for the stability in SAMA's portfolio is that it reports the book value of its equity portfolio, and doesn't adjust the portfolio up or down for equity market moves. This implies that SAMA's data understates the expansion of SAMA's foreign portfolio when equity markets are rising and overstate the growth in SAMA's portfolio when equity markets are falling. Assuming that 20 percent of the increase in SAMA's securities portfolio is directed towards equities, SAMA likely began 2008 with \$74 billion in equities. As a result of the fall in equity markets, the market value of that portfolio fell to around \$63 billion in December 2008 despite new inflows. SAMA's total valuation losses in 2008 are estimated at around \$40 billion. That is quite manageable, though, given the scale of recent inflows—and much lower than the losses experienced by other large Gulf funds.

Chart 13

SAMA: Estimated Portfolio
(including foreign assets of pension funds)



Sources: Saudi Arabia Monetary Agency, authors' estimates.

Endnotes

1. The ADIC received ADIA's stakes in domestic firms and banks and a portion of its private equity holdings. It also reportedly splits Abu Dhabi's dividend from the Abu Dhabi National Oil Company (ADNOC) in a 30/70 split. See Wayne Arnold, "Wealth funds draw profits and attention," *The National*, July 13, 2008, <http://www.thenational.ae/article/20080713/BUSINESS/923178969/0/SPORT>.
2. A simple average of West Texas Intermediate (WTI), Brent, and Dubai Fateh oil spot prices was \$97 a barrel in 2008. Oil prices averaged \$64.20 and \$71 a barrel in 2006 and 2007, respectively.
3. Members of the GCC include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
4. For more on the accumulation of GCC foreign assets in 2007, see Brad Setser and Rachel Ziemba, "Understanding the New Financial Superpower: GCC Foreign Assets," *RGE Monitor*, January 2008.
5. The authors assume that SAMA's equity portfolio is not marked to market.
6. The Government Pension Fund–Global managed \$398 billion at the end of November 2008. Given the rebound of euro, pound, and equity assets over the month of September, the authors assume it regained some of the value previously lost.
7. These reflect reported assets under management as of December 1, 2008.
8. Saudi Arabia plans to spend 25 percent more than planned in 2008 or slightly less than the estimated \$510 billion Saudi Riyals spent in 2008. "Saudi Arabia's 2009 Budget," Jadwa Investments, December 2008, http://www.saudi-us-relations.org/fact-book/documents/2008/2008_12_23_jadwa-2009-budget.pdf. The budgets of the UAE federal government and Dubai plan to increase spending by 20 percent. Simeon Kerr, "Dubai to spend through crisis" *Financial Times*, December 26, 2008, <http://www.ft.com/cms/s/0/d3ad44e8-d371-11dd-989e-000077b07658.html>.
9. See "Kuwait's KIA withdraws \$3.7 billion from abroad," Reuters, November 24, 2008, <http://uk.reuters.com/article/consumerproducts-SP/idUKLO62312520081124>. The Qatar Investment Authority has agreed to provide up to 20 percent of the capital base of Qatari banks and the Saudi Arabian pension funds have increased their exposure to domestic equities.
10. See "External Debt of the Emirates," Fitch Ratings, October 2008, and "Demystifying Dubai Inc.: A Guide to Dubai's Corporatist Model and Assessment of Its Rising Leverage," Moodys, October 2008. Although the federal government and those of Dubai and Abu Dhabi have little to no debt, state holding companies and state companies have borrowed from abroad. See Simon Kerr, "Dubai assures on debt pile," *Financial Times*, November 26 2008, http://www.ft.com/cms/s/0/226c5030-bb5b-11dd-bc6c-0000779fd18c.html?nclink_check=1.
11. Availability of private sector financing is likely to be lower than initially assumed, which implies that these projects will only be able to go forward if the government provides most of the capital. Despite assurances to the contrary, some high-profile projects are now being delayed if not canceled outright.
12. Other sovereign investors are also scaling back their investments in risky assets (equities and alternative assets) as they too recognize the need for more liquidity. Russia's national wealth fund, for example, is unlikely to be invested in foreign equities.
13. An average oil price of \$130 a barrel would swell official assets to about \$3 trillion by 2012.
14. The estimate for official outflows from 2005 appears to understate the accumulation by Qatar and the UAE. The most recent IMF 2008 estimates date from September 2008 and assume an average oil price of \$107.25 for 2008, over \$10 more than the 2008 level.
15. Among GCC countries, Saudi Arabia has long had the largest share of its foreign assets in private hands, though the individual and corporate foreign assets of the United Arab Emirates may soon top it if it does not already. See "The New Power Brokers: Gaining Clout in Turbulent Markets," McKinsey Global Institute, June 2008, http://www.mckinsey.com/mgi/publications/Power_Brokers_Gaining/index.asp, and Dr. John Sfakianakis, "Saudi-US Trade Relations: the Ties that Bind," SABB, January 16, 2008, <http://www.sabb.com/Attachments/Publications/SABB-Saudi-US-Trade-Relations.pdf>.
16. The authors' estimated asset allocation draws on available material in the press and from the funds themselves. For the best indication of ADIA's asset allocation, see Sudip Roy, "Money and Mystery: ADIA Reveals Its Secrets," *Euromoney*, April 2006, <http://www.euromoney.com/article.asp?PositionID=2195&ArticleID=1018077&IssueID=50148>, and Emily Thornton and Stanley Reed, "Inside the Abu Dhabi Investment Authority," *Business Week*, June 6, 2008, http://www.businessweek.com/globalbiz/content/jun2008/gb2008065_742165.htm?chan=top+news_top+news+index_news+percent2B+analysis.
17. At all oil prices, the authors have held central banks reserves constant at December 2008 levels.

18. While fixed income still dominated the portfolio of funds like the KIA in 2000, it began diversifying in 2005, and now has about 50 percent equity and has increased its share of alternative assets from the marginal levels of early this decade. See http://www.kia.gov.kw/NR/rdonlyres/29F215D4-DAB0-4F58-9DACB492211850B2/916/FINA_SPCH_LUXEMBORG_APR_9_08.pdf and <http://www.ft.com/cms/s/0/fa7e3c6a-b894-11dc-893b-0000779fd2ac.html>.
19. See “Qatar government fund has cut dollar exposure by half-PM” *Reuters*, October 2, 2007, http://uk.reuters.com/article/UK_SMALLCAPSRPT/idUKL0258596720071002, and “Who’s Afraid of Mideast Money?” *Business Week*, January 2008, http://www.businessweek.com/magazine/content/08_03/b4067042272294.htm?chan=globalbiz_europe+index+page_top+stories.
20. The authors use the benchmarks widely used by sovereign funds including MSCI equity indices, EPA/NAREIT indices for property markets. See Rachel Ziemba, “So, What Are Sovereign Wealth Funds Targeting? Assessing Benchmarks,” *RGE Monitor*, February 3, 2008, available at <http://www.rgemonitor.com/blog/economonitor/241718>.
21. Lacking a recognized private equity index, the authors have assumed that private equity investments received higher returns than comparable investments in public equity markets, as they were scaled up with leverage.
22. IMF survey of global sovereign funds suggests that 20 percent (about five) of the twenty-six funds surveyed invest in leveraged funds. The authors assume these five include most of the Gulf funds as well as Singapore’s GIC. See <http://www.iwgswf.org/pubs/eng/swfsurvey.pdf>. GCC funds like Istithmar, Mubadala, and DIC were thought to borrow as much as 70 percent of investment cost. See “Istithmar Eyes Two U.S. Subprime Causalities,” *Business Intelligence Middle East*, September 5, 2007, available at <http://www.bi-me.com/main.php?id=12776&t=1&c=33&cg=4>.
23. See “Monetary policy as tool to combating inflation in UAE,” Abu Dhabi Department of Planning and Economy, July 2008, available at <http://dpeportal.adeconomy.ae/pls/portal/url/ITEM/3A13610C327B462D9B178D0499B168FF>.
24. See John Sfakianakis, “Why Saudi Arabia Is Right Not To Revalue,” *Financial Times*, October 10, 2007, <http://www.ft.com/cms/s/0/4ba6456e-775f-11dc-9de8-0000779fd2ac.html>, and http://www.sama.gov.sa/en/news/undated/special_feature.htm.
25. The most recent data point is for August, when the reserve stock fell below \$50 billion, a level last seen in October 2007. The governor of the Central bank of the UAE suggested that 90 percent of hot money inflows to the UAE had reversed by August or September.
26. Saudi Arabia reportedly does not mark its portfolio to market, thus neither capital gains or losses on its equity portfolio are reported. For a partial list of equity holdings, see Patrick Sherwin, “Risk Allocator: The Premier League of Sovereign Wealth Funds,” *Citywire*, October 16, 2008, available at <http://www.citywire.co.uk/professional/-/features/other/content.aspx?ID=317746&Page=2> and http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1141531.
27. The authors assume returns of 5 percent for equities and real estate hedge funds, no change in exchange rates of the major currencies, and constant interest payments on fixed income through 2009 before rising slightly through 2010–2012. The authors assume constant oil production from Q4 2008 levels.
28. Economic Monitor, Samba Financial Group, October 2008, http://www.samba.com/GblDocs/Monthly_Monitor_Oct2008_Eng.pdf.
29. Several investment banks have been rapidly scaling back their estimates for the rate of growth of sovereign wealth funds from that expected even as recently as mid-2008. See Stephen Jen and Spyros, “Currencies: SWFs: Growth Tempered—US\$10 Trillion by 2015,” Merrill Lynch, November 10, 2008, <http://www.morganstanley.com/views/gef/archive/2008/20081110-Mon.html>, and Alex Patelis, “Sovereign Wealth Funds: one year on: The overflowed bathtub overflowed some more,” Merrill Lynch.
30. If the Saudis opted to increase their exposure to equities, they could change SAMA’s asset allocation by increasing the allocation to equity and/or corporate bonds or setting up a new institution. The \$6 billion public investment fund (managed by the ministry of finance) set up in 2008 is perhaps a step in this direction, though it seems to be targeted at domestic, not foreign, investment.
31. DIC cut staff this summer after its core fund investing in global blue chips suffered significant losses and the global leveraged buyout market froze.
32. HSBC suggested that property prices fell 4 percent in October from September in the secondary market as financing dried up.
33. See “Secretive funds urged on disclosure,” *Financial Times*, <http://www.ft.com/cms/s/0/48d49b0c-864a-11dc-b00e-0000779fd2ac.html>.
34. See “As Petrodollars Pour in Again, Gulf Nations Take Long View,” *Wall Street Journal*, December 15, 2000, <http://online.wsj.com/article/SB976830549181105335.html>.
35. The Abu Dhabi Investment Council received 30 percent of an unspecified dividend from Abu Dhabi’s surplus oil revenue. The funding formula for Mubadala is unknown and it may receive funds on an as-needed basis. Other outward investors like

IPIC, a joint venture of ADIA, ADNOC, the national oil company, and Taqa, a subsidiary of the partly privatized Abu Dhabi power company, also receive public funding. All also have loans from the international capital markets.

36. ADIA's holdings of emerging market assets are thought to be as high as 15–20 percent with the remainder roughly split between dollar and euro/pound assets. See http://online.wsj.com/article/SB118368956180958895.html?mod=todays_us_money_and_investing.

37. See "Still on track for a KD1.8b surplus this year ...," National Bank of Kuwait, December 3, 2008, <http://www.gulfbase.com/site/interface/SpecialReport/EB-PublicFinance03122008.pdf>.

38. See <http://www.kia.gov.kw/NR/exeres/484BA7CB-45B9-4B55-B3F3-52D946E33572.htm>.

39. See Ulf Laessing and Rania El-Gamal, "Kuwait's KIA to boost investments on local bourse," *Arabian Business*, September 16, 2008, <http://www.arabianbusiness.com/531170-kuwait-s-kia-to-boost-investments-on-local-bourse?ln=en>.

40. The emir's investment vehicles include Challenger, which now holds as much as 5 percent of Barclays.

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