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Role of the Middle Eastern Sovereign Wealth Funds in the current global financial crisis.

Tayyeb Shabbir*

* The author is an Associate Professor of Finance at the Department of Finance, College of Business Administration and Public Policy, California State University Dominguez Hills, Carson, CA 90747. The author wishes to thank but not implicate Zeynep Onder, Suleyman Ozmucur and the participants at the 29th Annual Meetings of the Middle East Economic Association/ASSA, January 2-5, 2009, San Francisco, CA for very insightful comments on an earlier version of this paper that was presented in that conference.

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1.0 Introduction:

The purpose of this paper is to examine the nature and the role of the Sovereign Wealth Funds (SWFs) in the context of the current global financial crisis which had its origins in the U. S. Subprime crisis that ensued in late 2007.

Our particular focus will be on exploring whether the investment activities of these SWFs in general and those of Middle Eastern countries in particular were conducive or inimical to financial stability. Also, what are some of the other important implications of the investments of these funds in terms of asset prices, exchange rate movements and emerging new international financial architecture?

The focus of the analysis is the recent global ('Subprime') financial crisis, so the scope of the analysis is purposefully kept within narrower bounds. Just as an incidental observation, there is a significant and growing interest amongst academicians and policy-makers alike in studying the various aspects of these SWFs ranging from such issues as impact of SWFs on global financial markets (Beck and Fidora 2008) to a greater need for 'transparency' and 'accountability' of these newly important vehicles of global finance (Truman 2008).

The rest of this paper is organized as follows:

Section 2.0 describes the nature of the Sovereign Wealth Funds (SWFs) followed by section 3.0 on "Stylized Statistical Facts about SWFs". The next section presents a brief analysis of the primary causes of the 'Subprime Crisis'. Section 5.0 analyzes the role of SWFs in the current global financial crisis and, finally, Section 6.0 presents "Concluding Remarks".

2.0 What are Sovereign Wealth Funds (SWFs)?

Even though there is no universally agreed upon definition of a SWF, the following is a fairly comprehensive one offered by the International Monetary Fund (IMF "Work Agenda" to study SWFs, February 2008) which defines SWFs as

"...special purpose public investment funds…that are owned or controlled by the government, and hold, manage or administer assets primarily for medium- to long-term macroeconomic and financial objectives. The funds are commonly established out of official foreign currency operation, the proceeds of privatizations, fiscal surpluses and/or

receipts resulting from commodity exports. The funds employ a set of investment strategies which include investments in foreign financial assets".

Besides being typically state-owned, generally, a SWF also has no explicit liabilities; it has a relatively long investment horizon, high risk tolerance and a high degree of foreign currency exposure. Also, such a fund is managed separately from official exchange reserves. (Jen 2007). There are apparently a few close cousins of SWFs as well such as Sovereign Pension Funds; however, the latter tend to have explicit liabilities.

SWFs may be set up for purposes of revenue stabilization, maximizing risk-adjusted returns, intergenerational national consumption smoothing for resource-dependent economies, diversification from single revenue source. (Moshirian 2008). In this paper, we will consider a SWF to be primarily interested in foreign investments, with a long term investment horizon and high risk tolerance.

Again, it is useful to categorize world wide SWFs into two groups characterized by their sources of funds—so-called "Commodity" and "Non-commodity" SWFs. The former draw their funds from resource based (e.g. oil) current account surpluses while the latter draws their respective funds from non-resource current account surplus based on exports of manufactured goods and services often operating under a managed foreign exchange rate regime requiring currency market interventions. The Middle Eastern SWFs typically belong to the former group while the East Asian SWFs are representatives of the latter type.

Even though SWFs have been around since at least 1953 (e.g. Kuwait Investment Authority), it is only in the last few years that they have garnered extraordinary attention. They have enjoyed exponential growth in assets on account of commodity boom and export generated current account surpluses for many of the East Asian countries. The SWFs role as potential 'rescuers' of several financial institutions during the early phase of the subprime crisis has really brought them much recent attention. In any event, these funds have enjoyed an exceptional period of growth. As noted by a recent position paper by the Swiss Bankers Association (May 2008), SWFs currently have a worldwide investment volume of more that $ 3 trillion and the assets managed by such SWFs could reach $ 7 trillion by 2012 and $ 10-15 trillion by 2015.

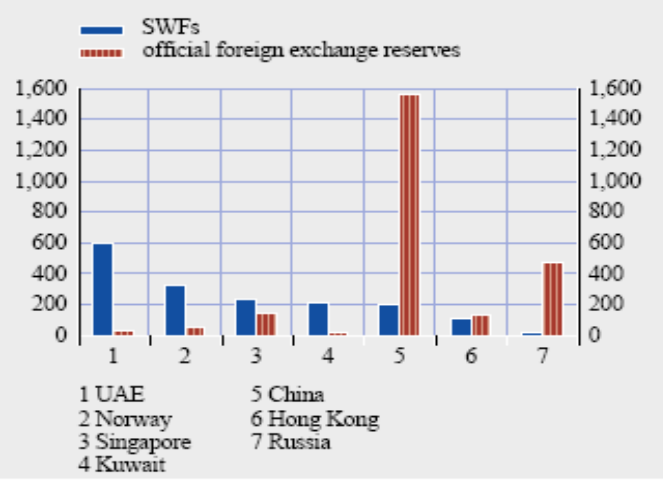
In the following section, I will present a few stylized facts about SWFs to sharpen our perception of them.

3.0 Stylized Statistical Facts about SWFs.

Figure 1 presents estimates of Official Exchange Reserves as well as the corresponding SWFs of various countries as of 2008. Note that a country like UAE, with a long tradition of funding a SWF, has a proportionately modest Official Foreign Exchange Reserves. However, unlike UAE, China which is a relatively new entrant in this field has an 8:1 ratio of its Official Foreign Exchange Reserves ($ 1.5 trillion) to its

SWF ($ 0.2 trillion). In the future, one can expect China (and Russia) will fund their SWFs relatively more using their vast Foreign Exchange Reserves. This has obviously very important implications for the world-wide growth of SWFs and global rebalancing of investment flows between U. S. Treasuries vs. more risky equities.

Figure 1: Estimated Official Exchange Reserves and SWFs of various countries (2008)



Sources: IMF and authors' estimates based on various national sources

The following Table 1 presents a summary of the largest SWFs in terms of their relative asset size and proclivity towards Foreign Direct Investment vs. Equity Investment. Witness the trend towards higher levels of foreign investment as well as medium to high level of risky assets such as equity.

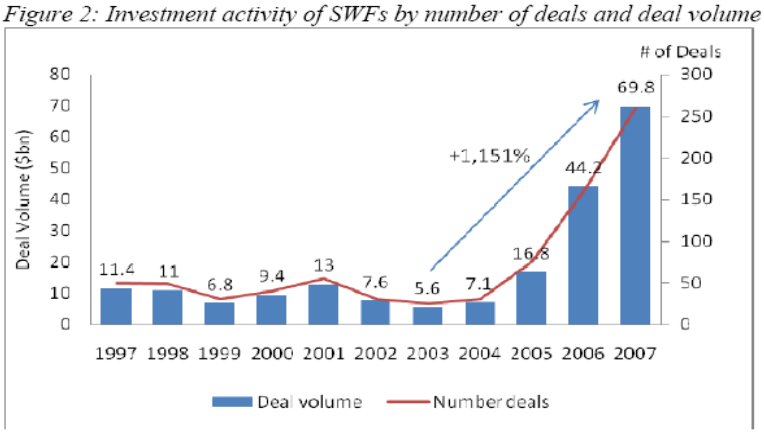
Table 1: Characteristics of the World's largest SWFs.

Country	Fund	Assets (USD bn)	Foreign investment	Equity investment
Oil exporters				
UAE	Abu Dhabi Investment Council	400-800	High	High
Norway	Government Pension Fund – Global	373	High	Medium
Saudi Arabia	SAMA	300	High	Low
Kuwait	Kuwait Investment Authority	213	High	High
UAE	Investment Corporation of Dubai	20-80	High	High
Qatar	Qatar Investment Authority	20-60	High	High
Libya	Libya Investment Authority	20-60	High	High
Brunei	Brunei Investment Authority	10-50	High	High
Norway	Government Pension Fund – Norway	~20	Low	Medium
Russia	Future Generations Fund	~24	High	High
East Asia				
China	China Investment Corporation	~200	High	High
Singapore	Government Investment Company	~130	High	High
Hong Kong	Exchange Fund Investment Portfolio	~112	High	Low
Singapore	Temasek Holdings	~108	Medium	High
Korea	Korea Investment Corporation	~20	High	High

Source: European Central Bank, 2008
Notes: figures are only rough approximations. "High" and "Low" refer to shares above two-thirds and below one-third respectively.

Regarding the level of investment activity of SWFs, Figure 2 shows that since 2004, there has been a particularly sharp increase in the activity of SWFs, both in terms of the number of deals consummated and their dollar amount. Amongst the factors behind this trend have been the recent commodity price boom as well as vast increases in foreign reserve assets of China and other East Asian countries due to boom in export earnings. Of course, during 2007, some of these deals were also motivated by an infusion of capital in distressed U. S. and European financial institutions.

Figure 2: Investment activity of SWFs by number of deals and deal volume



Source: Marchick, 2008

Table 2 below shows the relative importance of Middle Eastern SWFs which are shown to comprise between 39-46% of the total world-wide SWF assets. In addition, as evident from the Figure 3 which follows and some of the largest such funds belong to the Middle Eastern Oil Producers.

Table 2: SWF assets*

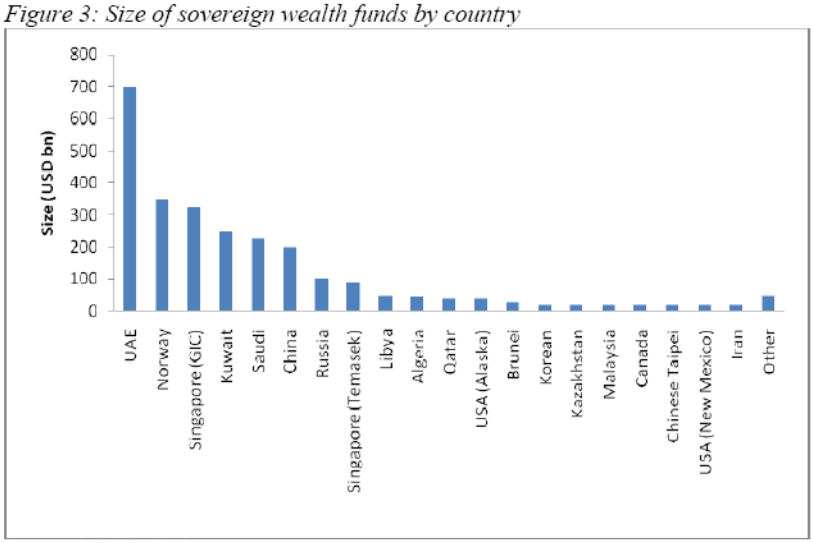
	USD billion	% of total SWF assets
Total SWF assets	2,998—3,737	100
Of which:		
Top ten SWFs	2,367—3,034	79—81
Commodity funds	1,900—2,504	63—-67
East Asia	999—1,139	30—33
Middle East	1,168—1,730	39—46
Europe & Central Asia	637	17—21
Africa	82—114	~3
Americas	114-119	3-4
Memo items		
*Official reserves***	*7,155*	
Hedge funds and private equity	*2,800*	
Private pension, insurance and mutual funds	*74,900*	
Global financial assets	*190,000*	

* Estimates are mostly based on 2007 year-end figures, but also include some 2007 mid-year figures as well as figures for early 2008.

** Official reserves including gold at market value as of December 2007.

Source: JPMorgan

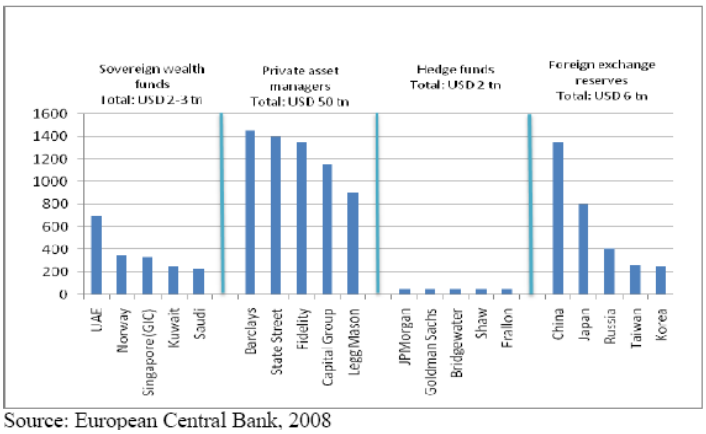
Figure 3: Size of sovereign wealth funds by country



Source: OECD, 2008

Finally, in order to gain an appreciation of the relative importance of SWFs in relation to other asset classes, note that while SWFs have been growing in size lately, they still are a rather modest asset class compared to private–managed assets and foreign exchange reserves (see Figure 4 and Figure 5). However, the trend is changing and it is expected that in the near future, there will be significant inroads made by SWFs at the expense of these other asset classes, particularly the foreign exchange reserve asset class.

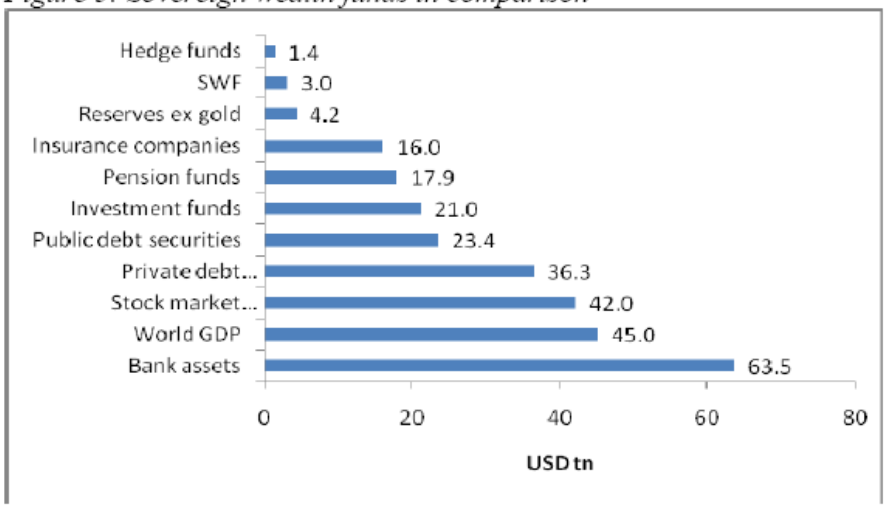
Figure 4: SWFs in comparison with other asset classes distributed by major players.



Source: European Central Bank, 2008

Figure 5: SWFs in comparison with other asset classes

Figure 5: Sovereign wealth funds in comparison



Source: Kern, 2007

4.0 A Brief Anatomy of the Subprime Crisis.

Even though the SWF phenomenon under scrutiny is related to the current ('Subprime') crisis, the primary purpose of this paper is not to enumerate the various factors that have lead up to this financial crisis. Thus, here I would limit myself to presenting a rather brief anatomy of the crisis. Also, by this time, the causes of this crisis are generally well known or at least have been researched sufficiently. (For representative studies, consider Shabbir (2008), Dodd et al (2008)).

4.1 Brief Background:

The trigger of this financial crisis in the U. S. with its attendant significant negative impact on its real sector and now evident global spillover or contagion effect was the subprime mortgage crisis which precipitated in the mid-2007. As is abundantly well-known by this time, these subprime mortgage loans were generally provided to the relatively less creditworthy clients, had extremely high 'loan to value' ratios and typically little or no documentation was required by the lender; in fact, due to these features such loans often got dubbed as NINJA loans i.e. loans to applicants who have No Income, No Job and No Assets! In addition to all the afore-mentioned features, these loans often carried artificially low 'teaser' rates which were to reset in one to three years into the loan period implying a relatively high credit risk embedded in these mortgages.

As of 2007, the subprime loans comprised $ 1 trillion out of the $ 14 trillion U. S. total mortgages outstanding – decidedly a small proportion. Again, those subprime loans originating during 2006 and early 2007 represented only a fraction of the $ 1 trillion

worth of outstanding loans. Thus even with rapid increase in delinquency rates in late 2006 and early 2007, the total losses were expected to be 'only' in the $ 100-200 billion range – an order of magnitude which, *prima facie*, should not have been expected to cause the impact that we are presently experiencing. The important puzzle concerning the present crisis is that though these subprime loans constituted a relatively small proportion of the total mortgage market and the magnitude of the losses were to be no worse than the ones U. S. economy absorbs routinely, they have ended up being the immediate impetus for the credit crunch[1]. This has surprised many an observer since the much heralded recent financial innovation of 'securitization' was supposed to have diffused the embedded risk, albeit elevated, of these as well as the Alt-prime and prime mortgages. The derivative securities in the form of Mortgage Backed Securities (MBS) and, closely related, Collateralized Debt Obligations (CDO) were meant to be innovations which were to allow the risk of such underwriting to be carried away from the originating financial institutions to a broader class of willing investors whose actions would also replenish the liquidity for the originating financial institution to resume mortgage lending. The MBS and CDO had grown immensely in the last few years. In fact, certainly before the outbreak of the current crisis, the above move away from the traditional 'originate-and-hold' banking model to 'originate-and-distribute' mortgage origination model was almost unequivocally heralded as one of the most important factors responsible for the growth of home ownership in the U. S. in the past few years since 2000-2001.

When the subprime mortgage crisis first started to emerge in mid- 2007, the dominant opinion was that it will not be a significant event which of course turned out not to be the case[2]. However, "Any of the myriad problems in the U. S. mortgage market could have been contained, but together they caused a crisis that spread across the globe". (Dodd et al. 2008).

4.2 The primary causes of the 'Subprime' crisis:

(1) The important result is that that otherwise positive financial innovation of 'securitization' (MBS and CDO) proved to be 'faulty' since it failed to work properly with the existing structure of financial institutions. In addition, 'lending exuberance' manifesting itself in lax underwriting standards at a time when real estate boom was waning in 2006, deficiencies in assessments of rating agencies (as well as 'over reliance' of investors on these assessments to the exclusion of other due diligence measures) and evident regulatory failures led to the present credit crunch by impairing the value of MBS and CDO to an uncertain degree. This uncertainty created serious practical difficulties. The various financial institutions holding these securities were faced with illiquid markets and rapidly falling market values of their assets and as a result they started deleveraging to conserve capital (See Leijonhufvud 2008; Also, Shabbir 2008 has a

[1] For perspective, the U. S. economy routinely absorbs stock market gains or losses in the 1% volatility range per day which compare well with the magnitude of losses expected from the subprime loans gradually over the next few years.

[2] Even Fed chairman, Bernanke, remarked in May 17, 2007, "All that said, given the fundamental factors in place that should support the demand for housing, we believe the effect of the troubles in the subprime sector on the broader housing market will likely be limited, and we do not expect significant spillovers from the subprime market to the rest of the economy or to the financial system."

representative model of how financial institutions were forced into deleveraging).This lead to a credit squeeze with its severely negative repercussions on the real economy. In fact, a major such emergent lesson is that financial innovations should come with a warning label, 'handle with care'.

(2) Besides the afore-mentioned behavioral mechanism related to IBs and applicable to brokers and securities firms in general, the other main channel of contagion was the 'crisis of confidence' unleashed by the revelation that the MBS may have been mis-priced by an indeterminate extent on account of inaccurate rating assessments[3], transaction opaqueness and outright fraud and malfeasance[4].

(3) There were second order effects of the 'crisis of confidence' in conjunction with impaired subprime mortgage backed securities held by the mono line insurance firms (e.g. MBIA) causing a crunch in municipal bond market and adverse ripple effects on 'auction rate securities', precipitating a credit crunch in the student loan market.

(4) There is also evident regulatory failures when we look at the broader aspects of contagion of this crisis in the U. S. from it epicenter of subprime mortgage underwriting deficiencies, delinquencies and defaults. We are now learning that we did not fully comprehend how well the securitization-inspired MBS and CDOs will work with the existing regulatory framework and institutional set up. In addition, despite our limited reforms in the face of bitter experience with the opaqueness of off balance sheet entities during Enron and WorldCom debacles, we still have much work to do to keep a better track of these contingent net liabilities.

(5) In addition, the news of the anticipation of 'decoupling' of the U.S. and the rest of the world economies proved to be not so true after all since the recessionary malaise in the U. S. has, in fact, spread to the rest of the world.

5.0 SWFs and their role in the current global financial crisis.

In this section; I plan to discuss the role SWFs as a potential source of stability in the face of a financial crisis. There are, however, two points that need to be addressed prior to engaging in the above exercise.

Firstly, as it turns out in the case of the Subprime Crisis of 2007, the SWF injections of capital (via purchase of financial assets) in the distressed financial institution followed the outbreak of the crisis and few investments predated the crisis. That may not be the case in a future similar crisis when the SWFs will, in all probability, be not in the relatively enviable position of having been 'above the fray'. In other words, a future crisis may very well find SWFs themselves to be 'victims' of the crisis and not potential 'rescuers', per se; at least, not in as pure a sense as in the case of the present crisis. In

[3] Fender, Tarashev, and Zhu, H. 2008 make an interesting observation that reliance on ratings as a measure of quality may be an inadequate measure in case of CDOs even when it may be sufficient for the case of corporate bonds.
[4] Kelly, 2007 for a sector by sector timeline leading up to the 'crisis of confidence'.

fact, SWFs who injected capital in early to mid 2008 in some of the US- distressed financial institutions, for example, have already had a taste of this as the continued widening and deepening of the crisis has meant heavy losses for these SWFs which have turned them relatively more cautious.

Secondly, in the following discussion of the role of SWFs in this section, the Middle Eastern SWFs are not often singled out and the whole sleuth of worldwide SWFs is considered. This is done partly to provide a wider perspective to the analysis and partly on account of statistical convenience. However, wherever feasible, specific comments about Middle Eastern SWFs may be offered to sharpen the link of discussion to the formal title of this paper.

5.1 Nature of Investments made by SWFs during Subprime Crisis (2007-2008)

As can be seen from Table 3, during 2007-2008 Q 1, the SWFs from Asia as well as the Middle East made financial investments in a wide array of mostly American and European companies. These investments were typically made by purchasing convertible bonds which carried no voting privileges. Majority of these companies were financial institutions which needed urgent infusion of capital on account of the subprime CDO related losses.

Judging by the investments made by SWFs in distressed financial institutions globally during 2007 through 2008:Q1, they were evidently a significant and a stabilizing force during this initial phase of the subprime crisis.

The significance of these injections can be judged by noting that between November 2007 and 2008: Q 1, about $41 billion (or almost 40%) of the total of $105 billion capital injected into major capital-starved financial institutions was contributed by SWFs. Also, these infusions of capital came at a time of pessimism and extreme risk avoidance in these markets. As noted by Moshirian (2008), the SWFs purchased these stakes in these global banks when their credit default swap spread were at historically high levels and their stock prices at particularly low levels. Thus evidently this capital infusion allowed the banks to continue their operation. Also, as suggested by Table 4, in many instances, these capital injections resulted in higher share prices as well as a reduction in CDS spreads. Even though, as we well know, the subprime crisis has continued on and progressed to a full-blown financial crisis and an official recession in the U. S. and the longer run outcome for these institutions continues to be precarious, the situation would have been much worse but for the capital infusions provided by these SWFs. This, at least in the short run, demonstrates the potential stabilizing role of the SWFs.

Table 3

(2007-2008Q1)

Sovereign wealth fund	Acquired company	Transaction value (in USD billion)	Transaction value (in % of firm value)
GIC of Singapore	UBS	9.8	8.6
Abu Dhabi Investment Council	Citigroup	7.6	4.9
GIC of Singapore	Citigroup	6.9	4.4
Investment Corporation of Dubai	MGM Mirage	5.1	9.5
China Investment Company	Morgan Stanley	5.0	9.9
Temasek (Singapore)	Merril Lynch	5.0	11.3
Qatar Investment Authority	Sainsbury	3.7	25.0
KIA (Kuwait)	Merril Lynch	3.4	7.0
China Development Bank	Barclays	3.0	3.1
China Investment Company	Blackstone	3.0	10.0
Investment Corporation of Dubai	London Stock Exchange	3.0	28.0
Temasek (Singapore)	China Eastern Air	2.8	8.3
SAFE (China)	Total	2.8	1.6
SAFE (China)	British Petroleum	2.0	1.0
KIC (Korea)	Merril Lynch	2.0	4.3
Temasek (Singapore)	Barclays	2.0	1.8
Qatar Investment Authority	London Stock Exchange	2.0	20.0
Temasek (Singapore)	Standard Chartered	2.0	5.4
undisclosed "Middle East investor"	UBS	1.8	1.6
Abu Dhabi Investment Council	Carlyle Group	1.4	7.5
Investment Corporation of Dubai	Och-Ziff Capital Management	1.3	9.9
Investment Corporation of Dubai	Mauser Group	1.2	100.0
Investment Corporation of Dubai	Alliance Medical	1.2	100.0
GIC of Singapore	Myer Melbourne	1.0	100.0
China Citic Securities	Bear Stearns	1.0	6.0
Borse Dubai	Nasdaq	1.0	19.9
Investment Corporation of Dubai	Standard Chartered	1.0	2.7
Investment Corporation of Dubai	Almatis	1.0	100.0
GIC of Singapore	Merrill Lynch Financial Centre	1.0	100.0
Investment Corporation of Dubai	Barney's New York	0.9	100.0
Investment Corporation of Dubai	EADS	0.8	3.1
GIC of Singapore	Hawks Town	0.8	100.0
Investment Corporation of Dubai	ICICI Bank Ltd	0.8	2.9
Temasek (Singapore)	Tokyo Westin	0.7	100.0
Mubadala Development Comp. (UAE)	Advanced Micro Devices	0.6	8.0
GIC of Singapore	WestQuay Shopping Centre	0.6	50.0
Investment Corporation of Dubai	Sony	0.5	1.0
Qatar Investment Authority	OMX	0.5	10.0
GIC of Singapore	British Land	0.3	3.0
Investment Corporation of Dubai	Metropole Hotel	0.3	100.0
GIC of Singapore	Kungshuset	0.2	100.0
SAFE (China)	Commonwealth Bank of Australia	0.2	0.3
SAFE (China)	Australia and New Zealand Banking Group	0.2	0.3
SAFE (China)	National Australia Bank	0.2	0.3
GIC of Singapore	Roma Est Shopping Centre	0.1	50.0
Temasek (Singapore)	9You Online Games	0.1	9.4
Total		91.5	

Sources: Company websites and media reports.

Table 4: Capital injections into financial institutions and market response

Date of Announcement	Financial Institution	Writedown	Investors		Amount (USD b) / % total stake		Immediate market response*	
			SWFs	Other	SWFs	Other	Stock price (%)	CDS (%)
26 Nov 2007	Citigroup	$6b Q32007	Abu Dhabi Investment Authority		$7.5 / 4.9%		-1.2	-6
10 Dec 2007	UBS	$18b 2007	GIC of Singapore	Unknown Middle Eastern investor	$9.7 / 10.0%	$1.8 / 2.0%	1.4	-9
19 Dec 2007	Morgan Stanley	$9.4b Q42007	China Investment Corporation		$5 / 9.9%		4.2	0
21 Dec 2007	Merrill Lynch	$8.4b Q3 2007	Temasek Holdings	Davis Selected Advisors, L.P.	$4.4 / 9.4%	$1.2 / 2.6%	1.9	0
15 Jan 2008	Citigroup	$18.1b Q42007	GIC of Singapore, Kuwait Investment Authority	Sanford Weill, Saudi Prince Alwaleed bin Talal, Capital Research Global Investors, Capital World Investors, New Jersey Investment Division	$6.8 from GIC Singapore / 3.7%, $3 from Kuwait Investment Authority / 1.6%	$2.7 / 1.5%	-7.3	-5
15 Jan 2008	Merrill Lynch	$14.1b Q4 2007	Korea Investment Corporation, Kuwait Investment Authority	Mizuho Financial Group Inc.	$2 / 3.2% from Korea Investment Corporation and Kuwait Investment Authority	$2.6 / 4.1%	-5.3	-12
18 Feb 2008	Credit Suisse	$2.85b	Qatar Investment Authority		~0.5 / 1-2% open market purchase		3.2	2

*Immediate response refers to the change after announcement compared to the previous transaction day

Note: The stock price of Citigroup rose 6.5 percent on November 28, 2007, the third day after the announcement of the first capital injection. The stock price declines of Citigroup and Merrill Lynch on January 15, 2008 were confounded owing to the simultaneous announcement of huge writedowns and dilution of the claims of existing shareholders.

Source: IMF, 2008

5.2 Implications of SWFs for Financial Stability

5.2.1 Global Financial Stability

An assessment of the implications of SWFs for global financial stability should involve an evaluation of three interrelated characteristics of SWFs as a : (a) potential source of capital infusions, (b) provider of liquidity for the long-run and as a (c) correlate of systemic risk.

Firstly, as noted earlier, the attraction of SWFs as a potential source of capital infusion into capital-starved financial institutions trapped in a vortex of de-leveraging in the face of depreciating market value of assets has been evident. Even though, as the subprime crisis continued to worsen, we have witnessed a fair degree of retrenchment on the part of these SWFs, the significant infusions by these funds to improve capital base of the various important financial institutions in the earlier phases of the subprime crisis was unequivocally a positive development. However, there are some practical difficulties, including those of a political nature that have presented themselves as obstacles. Whether the full potential of SWFs as agents of financial stability will be realized will depend on a successful resolution of these obstacles.

Secondly, since by all accounts, SWF investment horizon appears to be a relatively longer run one--- thus the global financial system will be spared the 'sudden stop' vulnerabilities due to "hot" money flows; instead, these relatively patient money flows will be comparatively stabilizing. (Jen 2007). Also, by increasing liquidity globally, SWFs are expected, on net, to create an environment favorable to enhanced market efficiency. (Devlen et al. 2007) However, it may also be noted that by favoring investments in riskier assets for the long run, SWFs investments tend to promote risk-taking and thus yield a bias favorable to equities vs. bonds.

Thirdly, in terms of the implications of SWF investment flows for systemic risk—the picture is not that clear-cut. Intuitively, one would expect that SWFs (at least in their present forms) will be less prone to be highly leveraged, or subject to "herd" behavior; however, at present we know little about the operative objective function of all these different types of SWFs. For one thing, in the face of a future crisis, if the SWFs are relatively heavily vested in the various asset markets and they suffer along with the market, these funds will be naturally far less willing and able to act as rescuers and thus be more a part of the problem, rather than part of a solution. Still, as long as the 'core funding base' of a SWF is stable (and not overly cyclical or leveraged too much) they are potential pro-stability agents, especially when we also consider that these funds are not typically subject to capital adequacy requirements, though some international prudential 'codes of conduct' provision seem imminent and/or inevitable. However, such changes, if undertaken appropriately, may in fact enhance the net effectiveness of SWFs in terms of promoting financial stability.

5.2.2 Impact on asset prices and/or exchange rates

Theoretically, shifts in asset allocations by relatively large SWFs can have significant and sudden impact on the relative prices of those assets, and if those asset classes are expressed in different currencies, there can be spillover effects on exchange rates as well. However, these dire scenarios may not unfold in reality since it is often in the interest of these relatively large institutional buyers/sellers to pace their purchases/ sales to protect their own interest. Again, there are already institutional investors in various markets which are comparable in size to these SWFs and market regulators have experience dealing with this issue; for instance, through proscribing caps, effective monitoring, or outright safety triggers to halt trades. However, in the case of SWFs, an additional fear is expressed that some of them may be motivated by non-commercial or political objectives in sale/purchase of certain securities or assets. However, this can be effectively monitored, and if need be, at the margin, some additional norms or codes of conduct can be introduced. In any case, the present experience is reassuring as we observe that typically SWF portfolios are professionally managed with 'reputational capital' on the line.

5.2.3 Impact from the various Potential Feedback Mechanisms.

The SWF investment flows and stocks of funds are not immune to business cycle fluctuations, commodity cycles, geo-political risks, and technological shocks, which may drastically reduce the demand for certain traditional resources such as oil or other commodities from whose revenue these funds get replenished. Also, the exposure of these funds will be proportionately greater to a financial crisis itself to the extent that these SWFs were vested in those asset classes whose value may be seriously adversely affected by the crisis. Again, in the case of non-commodity funds, such as China CIC the exchange rate changes may also have a feedback impact if the country by itself, or under global pressure, decide to reform the exchange rate regime. Thus a revaluation of the Chinese currency would ceteris paribus reduce the country's current account surplus and thus erode some of the funding base of the country's Sovereign Wealth Fund.

5.2.4 Home Country Benefits due to a SWF

SWFs can enhance the fiscal health of a resource based country by providing a buffer against volatility of commodity price and revenue stream. One can argue for several other pro-economic development aspects of an SWF. However, often times there is a concern expressed, at least implicitly, that if the country has a non-democratic political institutional setup, SWF can be responsible for perpetuating such a setup.

Even in the case of the non-commodity funds, there is a danger to domestic financial stability due to the outflow of capital if the SWF comes about as a result of creating counter party liabilities on the part of the private sector including the private sector commercial banking system (Park 2008). As described in Park (2008), in the context of the East Asian Economies and their SWFs, an external shock may impair the

assets of the SWF and will make the domestic financial system vulnerable to a financial crisis. However, a pure commodity or resource funded SWF is relatively immune to at least this sort of a shock.

5.2.5 Concerns expressed about SWFs

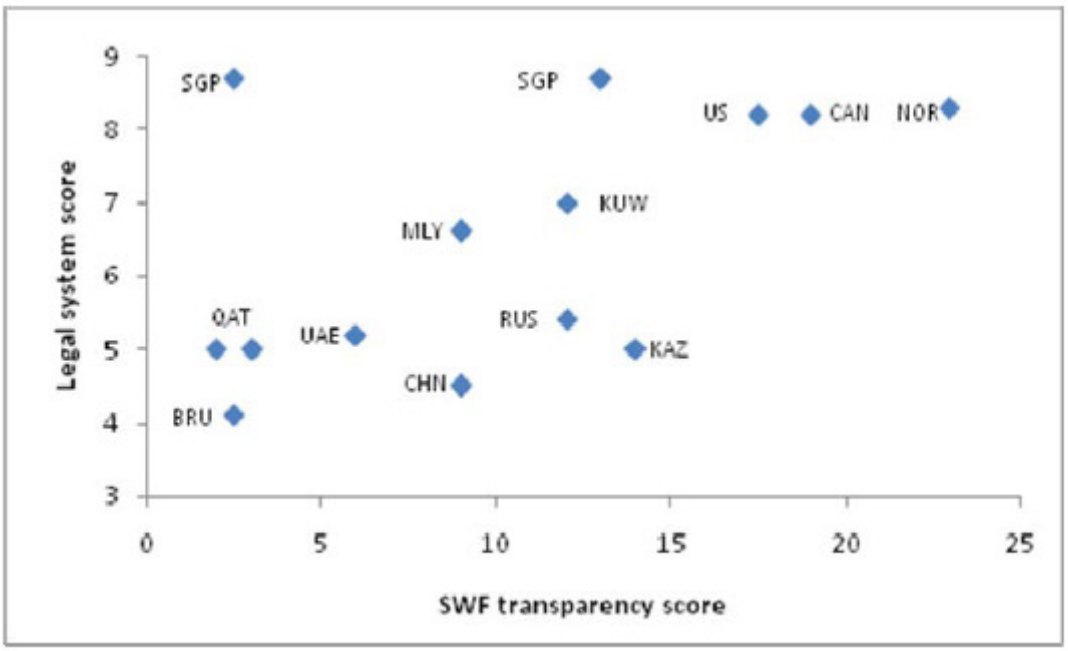
(i) SWFs may have 'hidden' goals which are non-commercial in nature. They may (in the fashion of a 'Trojan Horse') be looking to gain access to 'know how' and technology about patents and so on in the 'national security and defense' related industries. Also, they may be looking for 'political' investments that create potentially debilitating dependence in critical sectors of the economy such as oil and energy.

(ii) Certain SWFs may be too secretive and lack transparency or otherwise not adhere to an appropriate "code of conduct".

(iii) Certain countries with institutions which are weak and/or undemocratic may not be that 'desirable' business partners and thus by extension their SWFs will be so too.

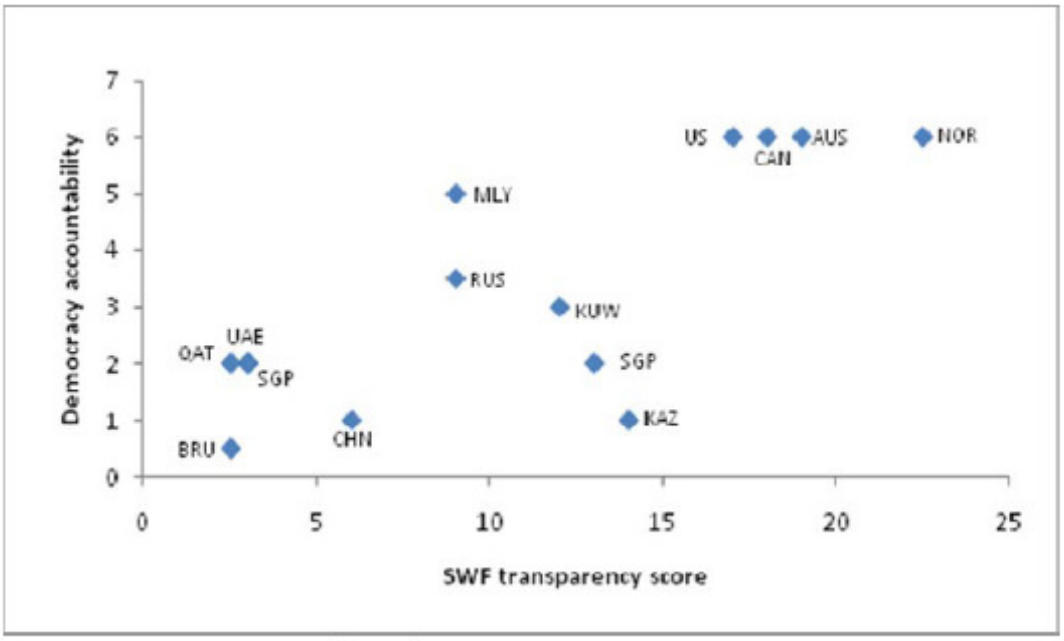
In any event, the following Figures show a simple scatter of a SWF Transparency Measures with the scores on Legal Institutions and Democratic Institutions respectively – note a positive correlation between the 'Transparency Score' and the Quality of Legal System Score as well as 'Democracy Accountability'.

Figure 6: SWF Transparency Score vs. Legal System Score



Source: European Central Bank, 2008

Figure 7: SWF Transparency Score vs. Democracy Accountability.



Source: European Central Bank, 2008

Though we will not discuss these in any detail, we want to note that IMF as well as the OECD is working on a set of principles which may represent a 'code of conduct' for the home and the host countries respectively. (Moshirian 2008).

6.0 Concluding Remarks

1) The phenomenon of the SWFs is truly a remarkable one. These funds are expected to occupy center stage in future discussions of global capital flows, financial stability, issues of governance, corporate central and transparency as well as the emerging remake of the international financial structure.

2) In the current crisis it is relatively easy to make a case for SWFs acting in the capacity of 'rescuers' and a potential source of capital infusion. However, this may not be the case in the aftermath of a future similar crisis if these SWFs happen to be vested in the same risky assets which may cause the deleveraging cascade for the other financial institutions in the first place.

3) One can view these funds to have a quantity as well as a quality dimension and the latter could very well be in the eye of the beholder. Discussions of whether these SWFs

are a "friend or a foe" are expected to continue. It is expected that eventually there will be eventually a "pecking order" both for recipient countries as well as home countries in terms of the preferred sources and destinations for such funds.

4) Concerns about sources, composition, investment strategies and end use of these SWFs would be important topics for ongoing research and discourse.

5) These SWFs will have far reaching effects on markets for risky assets as well as for the U. S. Treasuries. In time, development in commodity markets and Exchange Rate Regimes, along with the national income and budged deficit of the United States and European countries, will impact the funding base of these SWFs.

6) Expect evolution of a new monitoring and regulatory framework which may introduce important innovations in terms of "codes of conduct" for these funds and once such a discussion opens up; a similar code may also come about for hedge funds and other private equity funds.

7) These SWFs will have differential regional as well as global effect on countries ranging from the Developed Economies to the Developing ones.

8) The most critical question will be in terms of the effect of SWFs on financial stability in a tri-partite fashion -- at home, for host countries, and finally, in a global systemic sense. The still unfolding global crisis will provide a sort of a benchmark or a baseline scenario regarding the role of the SWFs. Future dynamics of global financial architecture and crisis inducing shocks will determine the exact profile that these SWFs will grow into.

REFERENCES

Adrian, T. and Shin, H. S. 2008. "Liquidity and Financial Contagion", Banque de France Financial Stability Review – Special issue on liquidity, No. 11, pp. 1-7.

Beck, Roland and Fidora, M. 2008. "The Impact of Sovereign Wealth Funds on Global Financial Markets", Occasional paper Series, No. 91, July, European Central Bank.

Bernanke, B. 2007. "The Subprime Mortgage Market" speech delivered at the Federal Reserve Bank of Chicago's, May 17; http://www.federalreserve.gov/newsevents/speech/bernanke20070517a.htm

Devlin, W., Brummitt, B. 2007. "A Few Sovereigns More: The Rise of Sovereign Wealth Funds", OECD Working Papers on Insurance and Private Pensions, No. 14.

Dodd, R. and Mills, P. "Outbreak: U. S. Subprime Contagion", Finance and Development, IMF, June, Volume 45, Number 2.

Fender, I., Tarashev, N. and Zhu, H. 2008. "Credit fundamentals, ratings and value-at-risk: CDOs versus corporate exposures", BIS Quarterly Review, March, pp. 87-101.

Jen, Stephen. 2007. "The Definition of a Sovereign Wealth Fund", Morgan Stanley Research Global, October 27, Morgan Stanley & Co, International.

Kelley, R. 2007. "The Grey Anatomy of the Current Credit Crunch", TD Economics Special Report, TD Bank Financial; www.td.com/economics

Kern, S. 2007. "Sovereign Wealth Funds – State Investments on the Rise", Deutsche Bank Research

Leijonhufvud, Axel. 2008. "Keynes and the Crisis", Policy Insight No. 23, Center for Economic Policy Research, www.cepr.org

Marchick, D. 2008. "Sovereign Wealth Funds and National Security", OECD & City of London Conference, The Carlyle Group, March 2008.

Moshirian, Fariborz. 2008. "Sub Prime Credit Problems, Sovereign Wealth Funds and Global Financial Stability", Working Paper, Australian School of Business, University of New South Wales, Sydney, Australia.

Park, Donghyan. 2008. "Capital Outflows, Sovereign Wealth Funds, and Domestic Financial Instability in Developing Asia", WADB Economics Working Paper Series, No. 129, October, Asian Development Bank, Philippines, Manila.

Pritsker, M. 2000. "The Channels of Financial Contagion", Working paper, Board of Governors of the Federal Reserve System, Washington, D. C. 20551

Shabbir, Tayyeb. 2008. "Anatomy of America's Subprime Mortgage Crisis of 2007-08: Channels of Contagion", March, Conference Proceedings of the Global Academy of Business and Economic Research, Houston.

Truman, Edwin M. 2007. "Sovereign Wealth Funds: The Need for Greater Transparency and Accountability", Policy Brief, Number PB07-6, August, Peterson Institute for International Economics, Washington, D. C.