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The potential role of Sovereign Wealth Funds in the context of the EU crisis

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The potential role of Sovereign Wealth Funds in the context of the EU crisis

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Abstract: The present study constitutes an inquiry into potential sources of funding for euro zone member states in the context of the present crisis and the role that they could play in overcoming it. Specifically, it emphasizes on the refinancing needs of Southern European member states over the following decade taking into account both the maturity profile of these nations' debt and the relationship between short-term and long-term securities. On the side of the possible funding sources, emphasis is given on Sovereign Wealth Funds (SWF) and on their capacity to assist indebted European nations mainly through bond purchases, but also through other means like private equity or acquisitions. The ensuing relationship between Euro zone member states and SWF is analyzed both on purely economic and on political grounds, the analysis starting from the respective motives of both aforementioned sides, so that the possibility of an intervention by SWF in European debt markets can be properly assessed and its potential impact estimated.

Key words: Sovereign Wealth Funds, EU crisis

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Section I: Introduction

Although the existence of Sovereign Wealth Funds (SWF) is hardly a recent phenomenon, their proliferation over the last fifteen years as well as the quite spectacular rise in the total value of their holdings have turned them into one of the most widely discussed and debated over issues in global finance. It is true that over the past few years these heated debates seem to have decreased both in number and in intensity and this should be expected for a number of reasons. Among others, these reasons include the stabilizing role that SWFs played, or at least attempted to play, during the most dangerous phases of the 2007-2008 global financial crisis (Cohen 2008, Miracky & Bortolotti 2009, Fei & Xu 2011), the agreement reached in the context of the International Working Group on SWF concerning a number of generally accepted principles and practices that SWF should adhere to (International Working Group on SWF 2008, Behrendt 2010) and of course the eruption of the sovereign debt crisis in the euro area periphery that has largely contributed to moving SWF, their strategies and the risks associated with them away from the spotlight. Even more recently, the drastic decline in oil prices has created doubts over the future prospects of at least some of the most important SWFs and shown that the development towards these funds' ever increasing role in international markets is certainly not irreversible.

However, it does not follow that the issues arising out of the growth of SWF have been settled or that the fears and worries that this growth gave birth to have been eradicated. And it certainly does not follow that even more intense debates are not going to emerge in the near future. The days of 2008 when the global financial system found itself on the verge of collapse constitute a rather extreme case and there is no guarantee that suspicion about the potentially destabilizing role of SWF investments (Drezner 2008, Knill et al. 2009) will not resurface after some degree of normalcy has been attained. Moreover, the generally accepted principles and practices that have been agreed upon may turn out to be quite open to different interpretations, not to mention the obvious problems associated with their enforcement. And as far as the low oil prices are concerned, they may have an effect on the growth rate of SWF asset holdings, but it is doubtful whether they can cause serious harm to more than a handful of them, even if they do continue to prevail in the following years.

In other words, all of the reasons stated above may turn out to be either of a transitory nature or simply not strong enough. While the rise and growth of SWF over the past fifteen years seems to be a symptom of more systemic changes, related mainly to the ongoing shift of economic power to non-western societies (Drezner 2008). And although this process has still a long way to go before we can actually talk of a new economic order, some of its repercussions have already started to be felt. If this is correct, then controversies over the role of SWF and their possible political motivations will continue and they may even get stronger to the extent that SWF start playing a more important role in areas and markets in which their presence has up to this point been marginal.

The sovereign debt markets of EU member states, especially the ones that have been hit strong by the present crisis, constitute an example of such an area and the possibility of a potential intervention of SWF in these markets constitutes the main issue that this study aims at analyzing. The importance of this issue should be obvious given the difficulties that nations of the European periphery have been facing and continue to face in refinancing both their short-run and – mainly – their long-run debt, implying that a more active participation of SWF in their debt markets could both constitute an important source of liquidity and provide with a partial alternative to their financing needs being covered by loans from the official sector.

The main objective of the present study lies exactly in examining whether and to what extent such a development is possible and in analyzing both the relevant motives of SWF and the reactions that may ensue in the recipient countries and in the EU as a whole. Although it is certainly the case that an assumption of the role of lenders of last resort by the SWF will mitigate the refinancing problems that countries of the EU periphery are currently facing, it is not at all self evident neither whether SWF will be actually willing to assume such a role nor that this possible development will not raise suspicions and fears concerning the role of these funds and the ways in which they may choose to exercise their influence. Moreover, at a more practical level, it needs to be shown that, even if the above complications do not arise, the size of SWF is large enough so that their intervention can be effective without assuming, in an utterly unrealistic fashion, that they dedicate the bulk of their capital to purchases of Southern Europe's debt.

In this context, the next section reviews some of the definitions that have been proposed in the literature for SWF, as well as the results obtained in this literature concerning their investment strategies and the available data with respect to their total holdings. Section III turns to the other side of the equation, i.e. to the analysis of the refinancing needs of selected European nations over the following decade, taking into account both the maturity profile of these nations' debt and the relationship between short-term and long-term securities. Then, Section IV analyses the main motives that govern SWF investment behaviour and examines the compatibility of these motives with the possibility of these funds; more active participation in European sovereign debt markets. The next section views this possibility from the perspective of EU nations and focuses on the reactions, positive or negative, that it would bring about. The study's sixth section contains an overall assessment of the potential role that SWF are likely to play in the context of the EU debt crisis, while Section VII concludes[1].

[1] It should be mentioned that although the main focus of the present study lies in the potential effect of SWF on EU sovereign debt markets, other aspects of possible SWF contributions to overcoming the current crisis in Europe, such as acquisitions, investments in private equity or FDI) will also be discussed, albeit briefly, in the following pages.

Section II: Investment strategies and size of Sovereign Wealth Funds

Various definitions of SWF have been proposed in the relevant literature (Balding 2008, Kimmitt 2008, Weiss 2008), ranging from extremely wide ones that may encompass almost the entirety of state-owned or state-controlled assets to the rather narrow ones that place somewhat strict requirements on the funds' investment behaviour. An example of the former case is provided by the definition by Truman (2008), in the context of which SWF are essentially deprived of all the idiosyncratic features that separate them from standard operations of the government sector. An example of the latter case can be found in the definition given by the International Monetary Fund (2008), which restricts SWF behaviour to the holding of foreign assets for long-term purposes, thereby implying that a particular fund may or may not be categorized as a SWF depending on the geographical and temporal allocation of its investments.

A much more balanced definition is given by the International Working Group on SWF (2008), according to which the latter are *"special purpose investment funds or arrangements, owned by the general government"* with their strategies including, but not necessarily being restricted to, investments in foreign financial assets. The definition given by the US Treasury (2007) emphasizes on SWF being funded by foreign exchange assets and especially on discriminating between SWF operations and the management of foreign exchange reserves by monetary authorities, while the approach taken by Beck and Fidora (2008) focuses on the common elements that can be found in all, or at least in most of, the relevant studies. According to the authors, these elements consist not only in the fact that SWF are government-owned and in their discrimination from official reserves of the Central Bank, but also in the lack, or the existence of a very limited amount, of liabilities.

This latter element essentially serves so as to rule out pension funds which are of course government-controlled and which do invest significantly in foreign financial assets, but which have substantial and explicit liabilities against the employed population that

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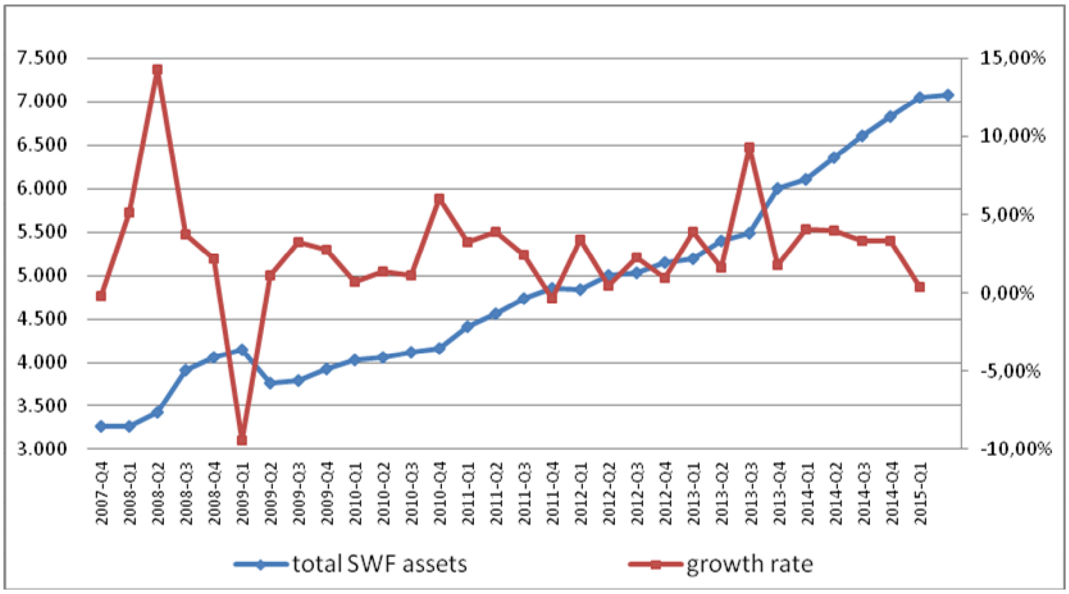
provide them with their reserves. Finally, the origin of SWF holdings in either commodity exports – predominantly oil and natural gas – or perpetual current account surpluses should probably be added to the above elements (International Working Group on SWF 2008, Kimmitt 2008), although other sources of funds, such as fiscal surpluses or privatization receipts, should not, in principle, be ruled out. In the context of the present study, SWF shall be understood in the sense of the elements outlined above, in an attempt to avoid a very narrow definition, without at the same time failing to distinguish the main and critical characteristics that an investment vehicle must possess in order to qualify as a SWF.

Figure 1: Evolution of Sovereign Wealth Funds' total assets (in $ billions)



Source: SWF Institute

As far as the total size of SWF is concerned, it is currently (March 2015) estimated by the SWF Institute at $7,084 billion, having more than doubled since March 2008, when the respective figure was equal to $3,427 billion. Although it has correctly been pointed out that this size is still quite low in relation to total financial assets in the global economy (Beck & Fidora 2008, IMF 2008), it is certainly a not inconsiderable sum, especially if account is taken of its dynamics. These are portrayed in Figure 1 on a quarter by quarter basis for the past years, with the respective growth rate of total SWF size being shown in the right-hand axis. The data clearly show a strong rising trend which was only temporarily interrupted in early 2009, probably as a result of the serious losses that many large SWF suffered after they invested heavily on Western financial institutions that were severely hit by the financial crisis. From that point onwards, the proportional rate of change of total SWF holdings, on a quarterly basis, passed into negative territory only once, during the last quarter of 2011, being usually higher than 2%. Calculated on an annual basis, total SWF asset holdings declined by 2.8% in 2009, but displayed positive growth rates of almost 10% during the two consecutive years. The annual growth rate was equal to 7.4% in 2012, after which SWF holdings entered a phase of rapid acceleration, rising by 17.5% in 2013 and by 15.6% in 2014.

Despite the fact that uncritical projections into the future are usually the source of much error, it is probably worth mentioning that such a projection, based on the history of the 2007-2014 period, implies that SWF total assets will have surpassed $15 trillion by 2021 and will have reached a value of $33 trillion by 2028. Even without taking into account such simplistic calculations, it is self-evident that a continuation of the existing trend in the immediate future will lead to a dramatic rise in the weight of SWF in international financial markets. Given that this rise to prominence of SWF has taken place within a rather small period of time, it is no wonder that such data, and especially such projections, have created much disquiet over the past few years (Drezner 2008, Cohen 2008, Kimmitt 2008).

This disquiet can be further explained if it is taken into consideration that, with the exception of the Norwegian Government Pension Fund, the origin of the most important SWF lies outside Western Europe and North America. Table 1 contains the most recent available data on the twenty largest SWF globally, clearly indicating that these funds' geographic origin lies, by and large, either in the oil-exporting nations of the Middle East or in the new economic powers of East and Southeast Asia that exhibit continuous and significant balance of payments surpluses. The Abu Dhabi Investment Authority is the largest fund of the former category with a value of total assets estimated at $773 billion, followed closely by the Saudi Arabian SAMA Foreign Holdings, while China Investment Corporation, with an asset value of $652.7 is the largest fund in the latter category, but only

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one of three Chinese funds that make it to the top twenty, even if Hong-Kong is construed as a separate political entity. According to the data, a relative balance exists between SWF being funded by commodity exports (mainly oil), including funds from Russia, Kazakhstan and Algeria in addition to the ones of Norway and the Middle East, and SWF being funded by non-commodity exports, including the Australian Future Fund in addition to the funds originating in China, Hong-Kong, Singapore and South Korea.

What is not balanced is the relative size of the several funds, since the data show a remarkable concentration of wealth in only a handful of really large SWF. The three largest funds are responsible for more than 1/3 of total assets held by all SWF, this proportion exceeding 50% if the two large Chinese funds are added. The ten largest funds possess assets estimated at $5.378 billion, or just over 3/4 of the total, while the twenty largest ones, i.e. the ones contained in Table 1 concentrate nearly 90% of total assets held by SWF globally.

Table 1: Sovereign Wealth Funds' ranking by total assets held

ranking	Sovereign Wealth Fund	Country	Inception	Origin	Assets (in $ billion)	Assets (% of total SWF)	Wealth per capita ($)
1	Government Pension Fund - Global	Norway	1990	oil	863	12,18%	176.482
2	Abu Dhabi Investment Authority	United Arab Emirates - Abu Dhabi	1976	oil	773	10,91%	839.305
3	SAMA Foreign Holdings	Saudi Arabia	n/a	oil	757,2	10,69%	26.110
4	China Investment Corporation	China	2007	non-commodity	652,7	9,21%	484
5	SAFE Investment Company	China	1997	non-commodity	567,9	8,02%	420
6	Kuwait Investment Authority	Kuwait	1953	oil	548	7,74%	162.611
7	Hong-Kong Monetary Authority Investment Portfolio	Hong-Kong (China)	1993	non-commodity	400,2	5,65%	55.738
8	Government of Singapore Investment Corporation	Singapore	1981	non-commodity	320	4,52%	60.377
9	Qatar Investment Authority	Qatar	2005	oil & gas	256	3,61%	134.737

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10	National Social Security Fund	China	2000	non-commodity	240	3,39%	177
11	Temasek Holdings	Singapore	1974	non-commodity	177	2,50%	33.396
12	Australian Future Fund	Australia	2006	non-commodity	95	1,34%	4.127
13	Abu Dhabi Investment Council	United Arab Emirates - Abu Dhabi	2007	oil	90	1,27%	97.720
14	Reserve Fund	Russia	2008	oil	88,9	1,25%	620
15	Korea Investment Corporation	South Korea	2005	non-commodity	84,7	1,20%	1.440
16	National Welfare Fund	Russia	2008	oil	79,9	1,13%	558
17	Samruk-Kazyna JSC	Kazakhstan	2000	oil	77,5	1,09%	4.330
18	Revenue Regulation Fund	Algeria	2000	oil & gas	77,2	1,09%	2.027
19	Kazakhstan National Fund	Kazakhstan	2000	oil	77	1,09%	4.302
20	Investment Corporation of Dubai	United Arab Emirates - Dubai	2006	oil	70	0,99%	33.238
				total assets (top-20)	6.295,2	88,87%	
				total assets (top-10)	5.378,0	75,92%	
				total assets (all SWF)	7.084,0		

Source: SWF Institute

Table 1 also contains an indication of the relatively recent growth of SWF, since 12 out of the twenty largest ones were established after 2000, while only four of the funds contained in the table existed prior to 1990. Finally, the table's last column provides with an interesting view of these funds' size in relation to the respective national population. Although it should be stated that calculations concerning the per capita wealth of UAE funds were based on the population of the specific Emirates rather than the federal state, something which is also true with respect to Hong-Kong, the difference in orders of magnitude between Middle Eastern funds and the rest remain astonishing, the only exception being obviously Norway, which also possesses the common features of abundant natural resources and a small population.

The regional allocation of SWF in their totality is displayed in Figure 2, demonstrating the dominance of Middle Eastern and Asian funds, which consistently account for 75% of total SWF assets, this fraction actually rising to 76,2% according to the latest available data. On the contrary, the share of European funds has declined from 18% to 16,7% over the past five years, with a fraction ranging between 2/3 and 3/4 of this contribution being accounted for by Norway's pension fund. Moreover, if SWF are strictly defined as possessing no

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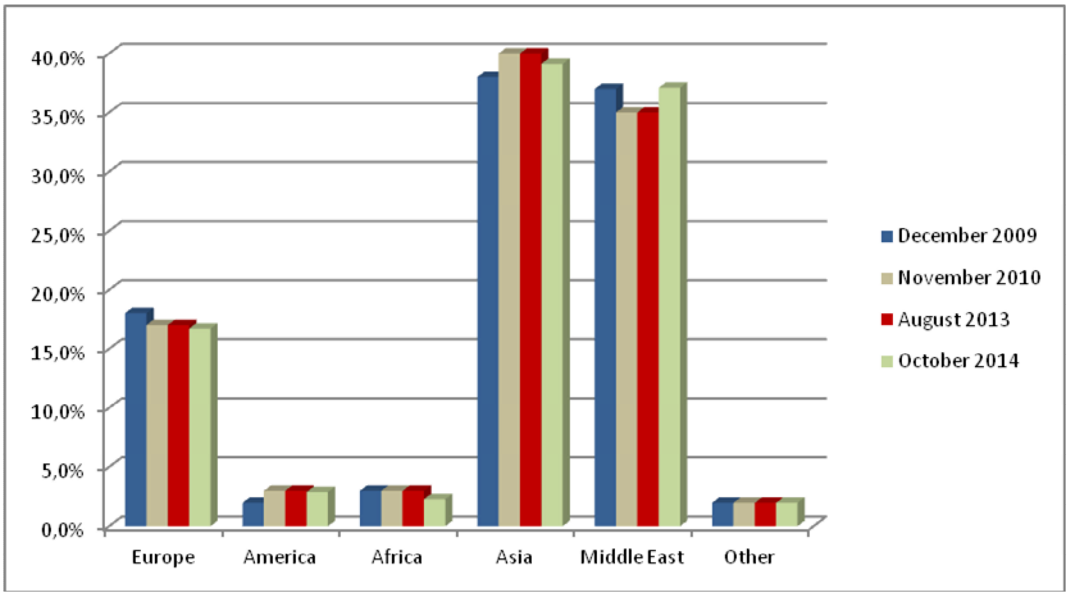
explicit liabilities, then both this latter fund and most other ones originating in western nations, such as the pension funds of Australia or of several American States, should be excluded, implying that the dominance of Middle Eastern and Asian nations in what could be called proper SWF is even greater than what the data presented here indicate.

Figure 2: Allocation of Sovereign Wealth Funds' total assets by region



Source: SWF Institute

Finally, the two following figures portray the allocation of SWF assets by specific nations, thus providing with an even more impressive picture of the concentration of wealth involved. The difference between Figures 3 and 4 is simply that the former shows results calculated for sovereign states, while the latter includes sub-national entities with a considerate degree of autonomy. This essentially means that Hong-Kong and the Emirate of Abu Dhabi are considered as autonomous entities in Figure 4, but as parts of China and of UAE respectively in Figure 3. Depending on the treatment of Hong-Kong, China concentrates a fraction between 1/5 and just over 1/4 of total assets held by SWF, while Abu Dhabi is alone responsible for 14% of these holdings, this figure rising to 15,2% if the SWF of the remaining Emirates – mainly Dubai – are included. Overall, four sovereign states (China, UAE, Norway and Saudi Arabia) concentrate almost 65% of total asset value, while

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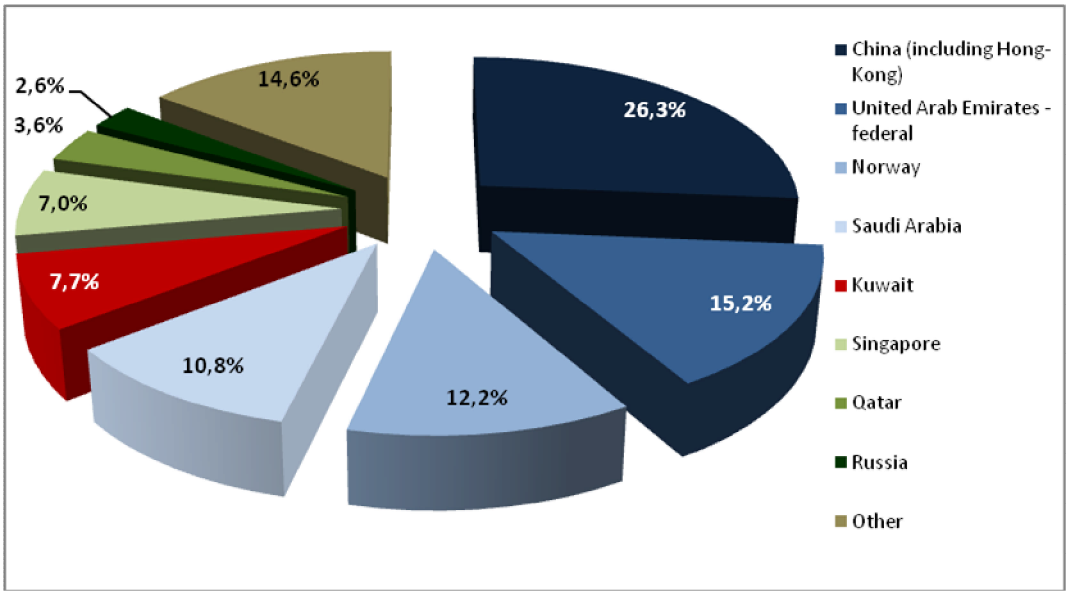
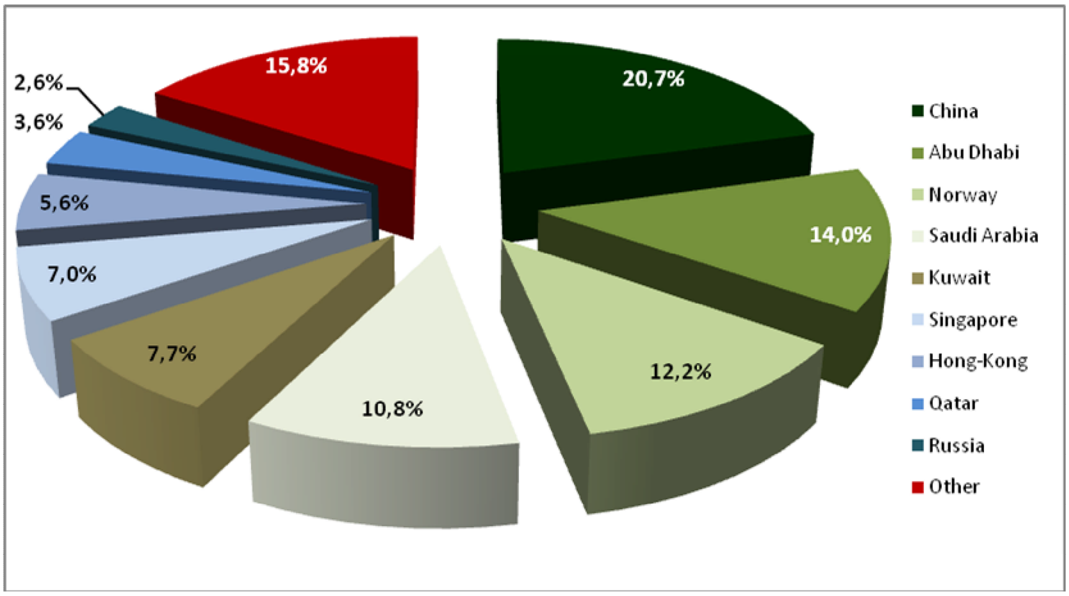
21% is accounted for by another group of four countries (Kuwait, Singapore, Qatar and Russia).

Figure 3: Sovereign Wealth Funds' total assets by nation of origin – only sovereign states



Source: SWF Institute

Figure 4: Sovereign Wealth Funds' total assets by nation of origin – sovereign states and sub-national entities



Source: SWF Institute

The above data lead naturally to the idea that it is the geographic allocation of SWF and the degree of concentration of wealth among them that caused the widespread worries that were associated with their ascension. It has been explicitly argued in the literature and it is probably not very far from the truth, that these worries escalated in a dramatic fashion exactly when China and Russia joined the club of nations operating large SWF (Cohen 2008) and it is quite self-evident that such worries would be inconceivable had Norway's pension fund been the norm to which SWF generally adhered. It seems therefore that uneasiness to accept the increasingly important role of SWF stemmed less from what could be considered as a significant degree of state intervention in global financial markets and even less from the not entirely, or not at all, democratic nature of many governments owning large SWF.

First, because state intervention in global markets is hardly a new phenomenon, not to mention that in certain cases, such as instances of widespread financial crises that threaten to destabilize the system, some forms of it may be welcome. It was indeed welcome during 2007-2008 when SWF intervened massively (Miracky & Bortolotti 2009) in an attempt to counteract the imminent at the time threat of collapse of several major western financial institutions, and it is probably still welcome in the context of the European debt crisis, although not necessarily without qualifications. Second, because democratic standards have never been a great concern with respect to the hereditary monarchies of the Persian Gulf, while there is no apparent reason why an autocratic government would manage its reserve funds in a worse or in a more potentially destabilizing manner in relation to a perfectly democratic one.

Of course, some worries are perfectly understandable to the extent that new powers may be inclined to substantially alter the established rules of the game. However, the literature on the investment strategies of SWF has hardly identified such cases (Balding 2008, Karolyi & Liao 2009, Avendano & Santiso 2009). Although it can hardly be argued that decisions made by governments, rather than private corporations, can be consistently and exclusively based on purely economic motives (Weiss 2008), the results of the majority of relevant studies show that no significant difference can be traced between the investment behaviour pattern of SWF and private investors focused on the expected rate of return. In the following pages, it will be argued that this result is hardly surprising if the basic motives behind the existence and operation of SWF are seriously taken into consideration. It should be stressed however, that the question of whether SWF invest primarily for economic or for political reasons does not really lie within the scope of the present study.

On the contrary, since this study's objective is simply to analyze the possibility of SWF investments in EU economies, with an emphasis on sovereign debt markets of Southern European nations, both these aspects should be taken into account. In other words, and irrespective of what type of SWF investment behaviour is more common, this possibility should be examined from both the political and the economic point of view and the respective qualifications and possible repercussions should be discussed in both cases. However, such an examination cannot commence before some estimations are offered of the amount of such investments that would be necessary. In order to provide with such estimations and to compare them with the total size of SWF as outlined in the previous pages, and given the study's emphasis on EU economies that have been severely hit by the crisis, it is first necessary to observe the actual financing needs of these economies in the immediate future.

Section III: Refinancing needs of European nations

The purpose of the present section lies exactly in the determination, through the use of available data, of the refinancing needs of several selected EU economies over the course of the following years, so as to demonstrate whether SWF have the capacity to assist these economies under fairly reasonable assumptions concerning both the future growth of SWF themselves and the degree to which they may choose to participate in European sovereign debt markets. The first point that should be clarified is that emphasis will be given on refinancing needs arising out the maturity schedule of the selected nations' government debt securities, and not on financing needs in general, i.e. not on instances of new debt issuance for the financing of fiscal deficits or for whatever other reason. It is therefore implicitly assumed that as a result both of the implementation of economic adjustment programmes and of the new framework for economic governance in the EU[2], which places rather harsh restrictions on member states' fiscal management and subjects their fiscal performance to a complicated monitoring procedure, the financing of fiscal deficits will not constitute a serious problem in the following years.

A second point, which can be seen as a corollary to the previous one, is that emphasis will be given on EU member states' long-term debt securities, leaving aside treasury bills or other similar forms of short-term debt directed mainly towards the attainment of adequate liquidity. The justification for this choice lies again in the rather irreversible path towards deficit reductions that the recent developments in the architecture of the eurozone seem to lead to, as well as in the view that deficit financing and access to short-term liquidity will probably turn out to constitute a less serious threat as long as and to the extent that long-run debt sustainability has been ensured[3].

A third issue concerns the actual selection of EU nations whose future refinancing needs are going to be examined. In principle, such an examination could include the entirety of EU, or at least of euro area, member states, but a focus on the Southern European nations that have actually faced difficulties in refinancing their debt over the past few years seems like a more reasonable choice. Not only because the risk associated with these countries is in general greater, but also because the interest rates on Northern European sovereign debt have remained at relatively low levels throughout the crisis. The exact Southern European countries whose refinancing needs are going to be examined include Greece, Spain, Italy, Portugal and France, while Ireland will be added to this category for rather obvious reasons. Belgium, with a high debt to GDP ratio and an economic duality resembling, though not being equivalent to, the Italian one could also be

[2] The new framework for economic governance in the EU refers to the general arrangement encompassing what has become known as *"the European semester"*, the *"Six-Pack"* and the *"Treaty on Stability, Coordination and Governance"*, also known as the *Fiscal Compact*, which entered into force in January 2013.

[3] Concerning short-term debt, being defined as including securities of a maturity up to twelve months, the selected nations' refinancing needs in 2015 stand at €15.000 million for Greece, €15.388 million for Portugal, €148.239,99 million for Italy, €79.321,2 million for Spain and €172.386 million for France. All data are obtained from the respective national authorities.

part of this list, but will be excluded due to the fact that it has not yet faced any significant challenges in refinancing its sovereign debt.

Finally, it should be mentioned that debt refinancing is certainly not the only manner in which SWF can contribute in the context of the eurozone financial and economic crisis. Nor do SWF constitute the only possible lender of last resort, since the BRICS can also play such a role through the use of their official foreign exchange reserves. As far as the first issue is concerned, SWF may contribute through different channels including acquisitions of enterprises that are scheduled for privatizations, participation in private equity markets or even the funding of foreign direct investment. Actually, privatization proceeds may even develop into a substitute to financing through the issuance of bonds for member states of the eurozone, given the prevailing state of affairs in the long-term capital market within the monetary union. The plausibility of this scenario may become larger to the extent that quantitative easing will lead to the transfer of a substantial fraction of debt in the secondary market to the ECB's balance sheet. Hence, a development is not inconceivable, in the context of which SWF investment strategies will be directed primarily to the acquisition of equity in privatized corporations and only secondarily to the purchase of government debt securities. As far as the second issue is concerned, official reserves of the BRICS may provide with a more reasonable source of funds for the refinancing of Southern European debt given that these reserves are traditionally managed with a view to stability rather than return. Both issues are therefore going to be revisited in the following sections, but for the time being the study's emphasis will remain on SWF possible contribution in the refinancing of sovereign debt.

Table 2 shows the exact magnitude of long-term debt refinancing needs of the aforementioned euro area member states for a ten-year horizon. All data presented in the table have been obtained from the respective national authorities that are responsible for the management of public debt and through publicly available sources[4]. No debt securities with a maturity smaller than 12 months have been included in the calculations, while all

[4] The national authorities mentioned in the text are the Public Debt Management Agency (Greece), the Agence France Trésor (France), the National Treasury Management Agency (Ireland), the Dipartimento del Tesoro (Italy), the Tesoro Publico (Spain) and the Agencia de Gestao da Tesouraria e da Divida Publica (Portugal).

debt securities that need to be refinanced during the relevant time horizon are assumed to be refinanced only once throughout this horizon. This latter assumption entails obviously no loss of generality and is made only for practical purposes, i.e. so as to avoid double counting of the relevant securities.

Table 2: Long-term debt refinancing needs of selected EU member states (2015-2024)

DEBT REFINANCING NEEDS (millions of €)	GREECE	ITALY	FRANCE	SPAIN	PORTUGAL	IRELAND	*Total refinancing needs per year*
2015	24.000	203.466	100.940	65.014	6.970	7.115	*407.505*
2016	7.000	186.083	147.140	80.149	15.290	7.990	*443.653*
2017	9.000	203.869	141.777	76.966	15.000	6.201	*452.814*
2018	4.000	145.151	112.677	58.362	15.920	13.181	*349.291*
2019	13.000	154.301	131.634	69.326	15.580	18.390	*402.231*
2020	5.000	114.498	95.182	55.188	14.260	26.121	*310.249*
2021	5.500	132.531	80.710	24.002	19.330	6.906	*268.979*
2022	7.000	67.333	78.790	21.952	5.620	5.315	*186.010*
2023	9.000	80.147	87.330	36.936	8.860	5.925	*228.198*
2024	8.500	75.691	67.673	67.133	14.300	8.976	*242.273*
Total refinancing needs per country	*92.000*	*1.363.071*	*1.043.853*	*555.029*	*131.130*	*106.120*	***3.291.203***

Source: National Authorities of the respective countries

According to the data presented in Table 2, the total refinancing needs of the selected countries for the following decade are equal to €3.291,2 billion, a figure which corresponds approximately to 46% of current total assets held by SWF. As should be expected, this figure is determined mainly by the refinancing needs of Italy and France which together account for 73,1% of the total, a proportion that reaches 90% when Spain is included. As far as the other three member states are concerned, Portugal seems to face the biggest problem with respect to the refinancing of its securities and Greece the smallest – except for the incredibly large refinancing needs during the current year – as a result of the lengthening of its securities' maturity following the PSI, while in Ireland's case the danger seems to lie in the quite dense concentration of maturing debt in the years 2018-2020.

Table 3 contains exactly the same data, expressed as a proportion of the respective countries' GDP and gross government debt in 2014. Overall, the selected countries have to refinance in the following decade 55,4% of their total debt, which corresponds to over 60%

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of their current collective GDP. The greatest by far difficulties are faced by Italy, its refinancing needs amounting to 84,6% of its GDP value for 2014 and constituting almost 2/3 of its total gross debt, the respective figures being also quite large in the case of Portugal. For reasons that have already been explained, Greece seems to be in a less threatening situation, at least from 2016 onwards, since it has to refinance just over 1/4 of its total current debt, while it is, along with France, the only one of the selected countries that faces a refinancing burden lower than 50% of its current GDP. Both France and Spain are rather well off in comparison to the rest of the countries examined, while in the case of Ireland the data of Table 3 confirm the refinancing difficulties that could ensue in 2019-2020, when over 1/5 of current Irish debt, corresponding to almost a quarter of the country's current GDP, will have to be refinanced within just two years.

Table 3: Debt refinancing needs as a proportion of current GDP and gross government debt

REFINANCING NEEDS	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	*Total*
GREECE											
as a % of 2014 GDP	13,0%	3,8%	4,9%	2,2%	7,1%	2,7%	3,0%	3,8%	4,9%	4,6%	*49,9%*
as a % of 2014 gross debt	7,4%	2,2%	2,8%	1,2%	4,0%	1,5%	1,7%	2,2%	2,8%	2,6%	*28,3%*
ITALY											
as a % of 2014 GDP	12,6%	11,6%	12,7%	9,0%	9,6%	7,1%	8,2%	4,2%	5,0%	4,7%	*84,6%*
as a % of 2014 gross debt	9,6%	8,8%	9,6%	6,8%	7,3%	5,4%	6,2%	3,2%	3,8%	3,6%	*64,2%*
FRANCE											
as a % of 2014 GDP	4,8%	6,9%	6,7%	5,3%	6,2%	4,5%	3,8%	3,7%	4,1%	3,2%	*49,2%*
as a % of 2014 gross debt	5,0%	7,3%	7,0%	5,6%	6,5%	4,7%	4,0%	3,9%	4,3%	3,3%	*51,6%*
SPAIN											
as a % of 2014 GDP	6,1%	7,5%	7,2%	5,5%	6,5%	5,2%	2,3%	2,1%	3,5%	6,3%	*52,2%*
as a % of 2014 gross debt	6,2%	7,7%	7,4%	5,6%	6,6%	5,3%	2,3%	2,1%	3,5%	6,4%	*53,1%*
PORTUGAL											
as a % of 2014 GDP	4,0%	8,8%	8,7%	9,2%	9,0%	8,2%	11,2%	3,3%	5,1%	8,3%	*75,8%*
as a % of 2014 gross debt	3,1%	6,9%	6,7%	7,1%	7,0%	6,4%	8,7%	2,5%	4,0%	6,4%	*58,8%*
IRELAND											
as a % of 2014 GDP	3,9%	4,4%	3,4%	7,2%	10,0%	14,3%	3,8%	2,9%	3,2%	4,9%	*57,9%*
as a % of 2014 gross debt	3,5%	3,9%	3,1%	6,5%	9,1%	12,9%	3,4%	2,6%	2,9%	4,4%	*52,3%*
TOTAL											
as a % of 2014 GDP	*7,6%*	*8,3%*	*8,5%*	*6,5%*	*7,5%*	*5,8%*	*5,0%*	*3,5%*	*4,3%*	*4,5%*	*61,7%*
as a % of 2014 gross debt	*6,9%*	*7,5%*	*7,6%*	*5,9%*	*6,8%*	*5,2%*	*4,5%*	*3,1%*	*3,8%*	*4,1%*	*55,4%*

Source: National Authorities, Eurostat, own calculations

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The data presented in Table 4 concern these countries' refinancing needs in the immediate future, expressed as a fraction of projected GDP and gross government debt. They may therefore be said to provide with a more accurate account of the potential threats, both because the analysis' horizon is not stretched too much into the future and because they incorporate the most recent estimations made by the European Commission[5] concerning the macroeconomic conditions in the countries under study during 2015-2016. Naturally, differences between the results of the two tables cannot be really significant. Those differences that do exist show that the use of the estimated values for GDP and gross debt imply a relatively lower burden of refinancing in comparison to the results of Table 3, although it is true that these needs remain substantial.

The analysis of the present section would not be complete if there was no attempt to link the magnitudes just presented to the available data on SWF size that were described in the previous section, so as to assess the likelihood of an effective intervention by SWF in the selected nations' sovereign debt markets. This assessment is made through the means of a sensitivity analysis aiming at the calculation of the cumulative burden that such an intervention would imply for the SWF under certain assumptions concerning the values of some important parameters. Having established the values of these parameters, it is straightforward to calculate the cumulative proportion of total SWF assets that must be dedicated to investments in the six countries' debt securities.

[5] See European Commission, "European Economic Forecast – Winter 2015"

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Table 4: Debt refinancing needs as a proportion of projected GDP and gross government debt

REFINANCING NEEDS	2015	2016
GREECE		
% of projected GDP	12,71%	3,58%
% of projected gross debt	7,47%	2,25%
ITALY		
% of projected GDP	12,56%	11,34%
% of projected gross debt	9,44%	8,63%
FRANCE		
% of projected GDP	4,71%	6,74%
% of projected gross debt	4,85%	6,87%
SPAIN		
% of projected GDP	5,97%	7,18%
% of projected gross debt	5,89%	7,01%
PORTUGAL		
% of projected GDP	3,97%	8,56%
% of projected gross debt	3,19%	6,93%
IRELAND		
% of projected GDP	3,75%	4,07%
% of projected gross debt	3,40%	3,77%
TOTAL		
% of projected GDP	*7,54%*	*8,05%*
% of projected gross debt	*6,69%*	*7,16%*

Source: National Authorities, European Commission, own calculations

The first one of these parameters is the coverage ratio, defined as the fraction of these countries' refinancing needs over the following decade that is assumed to be covered by SWF. The results to be presented below were calculated for a coverage ratio of 0,15 so that the assumption is that 15% of refinancing needs are met through bond purchases by SWF. The ratio chosen is considered to be a large one, in the sense that even a smaller extent of SWF participation could prove quite helpful in easing the refinancing difficulties faced by S. European states, while a larger ratio should probably be viewed as an exaggeration. The choice of a large value for this parameter corresponds essentially to a conservative

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approach, since it opens up the possibility that the total burden on SWF may turn out to be too high to be realistically expected.

The second parameter is the evolution of the exchange rate between the dollar and the euro, which has to be taken into account due to the fact that SWF reserves are expressed and usually denominated in U.S. dollars. Of course, given that an important fraction of these reserves is the outcome of balance of payment surpluses, this denomination is far from being exclusive. However, we shall make the unrealistic assumption that it is actually exclusive because, first, this is true for many large SWF that are funded by exports of natural resources and second, this makes the results even more conservative, at least as long as we assume the continuing prevalence of a strong euro.

Table 5: Cumulative fraction of SWF holdings dedicated to Southern European debt refinancing

exchange rate: 1,2		*year*									
coverage ratio: 0,15		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
annual growth rate of total SWF assets	*-2%*	1,06%	2,26%	3,53%	4,57%	5,80%	6,81%	7,74%	8,46%	9,33%	10,27%
	-1,5%	1,06%	2,24%	3,48%	4,48%	5,65%	6,61%	7,47%	8,12%	8,91%	9,76%
	-1%	1,05%	2,22%	3,43%	4,39%	5,51%	6,41%	7,21%	7,80%	8,51%	9,28%
	-0,5%	1,04%	2,19%	3,38%	4,30%	5,38%	6,22%	6,96%	7,49%	8,14%	8,83%
	0%	1,04%	2,17%	3,33%	4,22%	5,24%	6,03%	6,72%	7,19%	7,78%	8,39%
	0,5%	1,03%	2,15%	3,28%	4,13%	5,11%	5,86%	6,49%	6,91%	7,44%	7,99%
	1%	1,03%	2,13%	3,23%	4,05%	4,99%	5,68%	6,27%	6,64%	7,11%	7,60%
	1,5%	1,02%	2,11%	3,18%	3,97%	4,87%	5,52%	6,06%	6,39%	6,80%	7,23%
	2%	1,02%	2,09%	3,13%	3,90%	4,75%	5,36%	5,85%	6,14%	6,51%	6,89%
	2,5%	1,01%	2,07%	3,09%	3,82%	4,63%	5,20%	5,65%	5,91%	6,23%	6,56%
	3%	1,01%	2,05%	3,04%	3,75%	4,52%	5,05%	5,46%	5,68%	5,96%	6,25%
	3,5%	1,00%	2,03%	3,00%	3,67%	4,41%	4,91%	5,28%	5,46%	5,71%	5,95%
	4%	1,00%	2,01%	2,96%	3,60%	4,31%	4,77%	5,11%	5,26%	5,46%	5,67%
	4,5%	0,99%	1,99%	2,91%	3,54%	4,21%	4,63%	4,94%	5,06%	5,23%	5,41%
	5%	0,99%	1,97%	2,87%	3,47%	4,11%	4,50%	4,78%	4,87%	5,01%	5,15%
	5,5%	0,99%	1,95%	2,83%	3,40%	4,01%	4,38%	4,62%	4,69%	4,80%	4,91%
	6%	0,98%	1,93%	2,79%	3,34%	3,92%	4,25%	4,47%	4,51%	4,60%	4,69%
	6,5%	0,98%	1,91%	2,75%	3,28%	3,83%	4,14%	4,32%	4,35%	4,41%	4,47%
	7%	0,97%	1,90%	2,71%	3,22%	3,74%	4,02%	4,19%	4,19%	4,23%	4,27%
	7,5%	0,97%	1,88%	2,68%	3,16%	3,65%	3,91%	4,05%	4,03%	4,06%	4,07%
	8%	0,96%	1,86%	2,64%	3,10%	3,57%	3,80%	3,92%	3,89%	3,89%	3,89%

Source: National Authorities, SWF Institute, own calculations

The last parameter of this exercise is the future growth rate of SWF asset holdings and it is on the basis of this parameter that the results to be presented have been calculated. Specifically, the results displayed in Table 5 show the cumulative proportion of the selected nations' debt securities in total SWF assets under the assumptions of a dollar-euro exchange rate of 1,2 and a coverage ratio of 0,15 and for an annual growth rate of total SWF asset holdings ranging between -2% and +8% and applied for integrals equal to 0,5%. It has to be stressed that this range constitutes also a conservative assumption, given that the annual growth rate of SWF asset holdings was on average equal to 12% for the period 2008-2014. It should also be stressed that the values obtained represent cumulative effects, in the sense that they show, for any given year and any assumed growth rate, the percentage of SWF total asset holdings that will have been dedicated up to that point to the refinancing of the selected countries' sovereign debt.

Therefore, according to Table 5 and assuming a future annual growth rate of SWF holdings equal to 8%, SWF must invest 3,57% of their assets in these countries' debt securities by 2019 and 3,89% of their assets by 2024 in order to cover every year 15% of their total refinancing needs under an exchange rate of $/€ = 1,2. The importance of the growth rate to be assumed is obvious in the results displayed in the Table's columns, especially the ones near the end of the period under examination when growth differentials will have been applied for enough time to lead to substantial deviations. It can be seen therefore that an annual decline of total SWF holdings by 2% would mean that SWF should dedicate more than 1/10 of their holdings to European debt securities in order to achieve a coverage ratio of 15%, but only 4,7% of their holdings would be required if an annual growth rate of 6% prevailed.

Taking into account our rather conservative assumptions on the possible growth rates, as well as the high coverage ratio and the assumption that all available funds are denominated in a currency softer than euro, the results lead to a rather positive assessment of SWFs' capacity to positively affect debt sustainability in the euro area through a moderate and reasonable use of their resources. For growth rates that are relatively closer to observed historical data, the attainment of the target coverage ratio requires only a small fraction of these resources. Moreover, even for much lower growth rates, this fraction does not become unrealistically large, except in the case of negative growth rates and at the final years of the horizon examined. This positive assessment does not change even when much worse assumptions are made concerning one of the basic parameters.

For instance, even with an exchange rate as high as 1,5 a coverage ratio of 0,15 could be achieved throughout the entire period with the use of only 7,1% of these resources, even at a moderate growth rate of 4% per annum. While the attainment of an immensely unrealistic coverage ratio of 0,25 would require, at the same growth rate and at an exchange rate value of 1,2 less than 1/10 of total SWF resources by 2024. On the other hand, if we assume a much more reasonable coverage ratio of 10%, an annual growth rate of 8% and an exchange rate value of 1,1 – so as to reduce the bias created by the assumption that all SWF resources are denominated in dollars – the required SWF positions in European debt securities reach a maximum of only 2,4% of their total assets in 2021 and then decline to 2,38% by the end of the period examined.

As a result, the conclusion that SWF have the capacity to significantly assist Southern European countries in refinancing their debt without committing an unrealistically large fraction of their resources seems to be a rather safe one. What is less straightforward is the extent to which these funds will be actually motivated to provide such assistance, as well as the issue of whether an intervention in these markets along the proposed lines would be met with political reactions and renewed anxiety over their true objectives. It is those two issues that will be discussed in the two following chapters, before an overall assessment is offered.

Section IV: Analysis of Sovereign Wealth Funds' incentives

Starting with the incentives behind the investment behaviour of SWF, it will be helpful to link these incentives with the generally accepted views concerning the reasons behind the very existence and operation of SWF. Then, the question of whether an incentive exists for the undertaking of some particular course of action would reduce to the question of whether such action would promote one or some of the general objectives that SWF operation attempts to serve. In this manner, the possibility of SWF contributing in the context of the EU crisis mainly, but not exclusively, through the purchase of debt securities, could be assessed on the basis of whether and the extent to which these general objectives are served.

According to the literature (Drezner 2008, Cohen 2008, Griffith-Jones & Ocampo 2009), there are four general objectives that provide with the rationale behind the establishment of SWF. First, these funds' investments are meant to act as a buffer against possible sudden shifts in the international prices of commodities so as to ease the macroeconomic adjustment that such shifts bring about. In this case, what is meant by commodities is usually oil and natural gas, although this objective may also refer to the price of certain minerals for countries like Australia or for some African nations. Clearly, this issue is of lesser importance for SWF of the Far East whose resources come mainly from balance of payments surpluses rather than from the production and export of some specific commodity.

Second, the establishment of a SWF can provide with an alternative to holding large amounts of idle foreign exchange reserves, irrespective of how these reserves were accumulated. Of course, the accumulation of a sufficient amount of such reserves in the hands of the monetary authorities can hardly be considered as a waste, since it reinforces these authorities' capacity to stabilize the exchange rate through interventions – sterilized or not – in the foreign exchange market. However, this implies an opportunity cost which naturally becomes greater as the amount of reserves increases, therefore creating the need to find profitable investment outlets.

Third, investments by SWF in sophisticated corporations of more advanced economies can be a means of technology acquisition for economies with a lower level of technical and technological competence. Although technological transfer can also take place through different channels, for instance through foreign direct investment, the use of the large resources at the disposal of SWF for the outright acquisition of foreign corporations must seem like a very attractive and straightforward manner in which the technological gap between advanced and developing economies can be bridged. Obviously, this objective can be equally strong for all nations that operate SWF, irrespective of whether their resources come from commodity or non-commodity exports. In the former case, technology acquisition can be of critical importance in these nations' attempts to diversify their productive base so as to avoid dependence on the extraction of natural resources. In the latter case, this acquisition constitutes a necessary step that an economy must take if it is to advance to the level of producing high value added goods.

Finally, a fourth general objective refers to the operation of SWF being viewed as a form of savings in view of the possible, or in some cases certain, future depletion of natural resources. Obviously enough, this objective is irrelevant for SWF that grow out of large balance of payments surpluses. It is however of the utmost importance for the other category of SWF, not only because of the intergenerational equity that it ensures, but also because, along with the third objective mentioned above, it corresponds to a form of long-run programming of a country's macroeconomic development[6].

Turning to the issue of whether the aforementioned objectives can be viewed as providing with a motive towards SWF investments in European debt markets, it is true that the first two objectives are certainly not incompatible with this course of action. However, in view of both the motive to insulate one's economy from shocks in commodity prices and the will to avoid the high opportunity cost associated with holding idle reserves, it is rather questionable whether such investments would indeed be preferable to alternative ones that could yield a higher rate of return. Although sovereign bonds may actually yield significant returns in an era of crisis, a possible decision by SWF to invest in these bonds may be subject to the following problem. To the extent that such investments are substantial, they may prove critical in stabilizing sovereign debt markets and thus reducing the speads faced by the issuers. The lower interest rates that could ensue may turn out to imply both an insufficient buffer against commodity price movements and a still high opportunity cost[7]. To

[6] Another general objective of SWF, mentioned by Drezner (2008) and Bernstein et al. (2013) refers to the attempt to counteract, through overseas investments, the tendency towards an exchange rate appreciation in order to prevent the emergence of what has become known as the "Dutch disease".
[7] A similar problem referring to SWF investments in private equity is discussed by Bernstein et al. (2013).

the extent that they are not substantial, they will hardly assist in resolving the difficulties that EU member states are currently facing.

This contradiction between debt securities' attractiveness and SWF potentially stabilizing role may imply either that these funds' motive will not be strong enough or that their actions will not be effective enough. If SWF decide to invest in such securities in order to take advantage of higher interest rates, they will probably do so to an extent too small to be of significance. And if they adopt a more conservative strategy, being satisfied with low returns that also carry a low risk, they will probably prefer to participate in debt markets of Northern rather than Southern European nations.

This last objection can also be raised in relation to the savings motive, in the sense that this objective would be probably met in a better and more efficient manner through purchases of sovereign debt that is practically risk-free. As far as the technology transfer objective is concerned, it is plainly obvious that it would not warrant any thoughts of participating in Southern European debt markets whatsoever, although it could lead to significant investments in technologically sophisticated corporations of Northern Europe's private sector.

It seems therefore that none of the four central objectives of SWF can be expected to operate in the direction examined. There is however one motive that may lead SWF to significant investments in sovereign debt securities of the countries considered, related not to their generic objectives as outlined above, but to their determination to assist in the maintenance of stability in the economy of the eurozone. The reasons why both commodity funded and non-commodity funded SWF may crave such stability in one of their national economies' greater export markets are too obvious to require clarification. What could be envisaged therefore is an increased participation of SWF in bond purchases arising only indirectly from purely economic profit-loss considerations, along the lines of their earlier attempt to salvage western financial institutions from collapse during the most dangerous moments of the 2007-2008 financial crisis. That this attempt led to significant losses should not of course be forgotten, although the orders of magnitude of the risk involved differ greatly, even during a time of sovereign debt crises in a number of EU member states. But while SWF investments in the selected countries' sovereign debt would be most welcome if undertaken on the grounds of purely economic considerations, different reactions may ensue if motives of a political nature seem to prevail.

Section V: The European perspective

The political aspect and motivation of SWF investments has been a recurring theme in the relevant literature (Drezner 2008, Kimmitt 2008, Weiss 2008, Bernstein et al. 2013), as well as in the public dialogue within recipient nations. The possible existence of such an aspect in SWF decisions has led to numerous reservations concerning not only the extent to which government-controlled investments in such a massive scale are truly compatible with the operation and the basic mechanisms of a market economy, but also the danger that those governments may choose to use these investments as weapons in the international geopolitical arena (Drezner 2008). With regard to the issue at hand, the possible incompatibility between SWF actions and free markets can hardly lead to any reactions, especially as long as free markets do not show any particular willingness to refinance Southern European debt at sufficiently low interest rates. But the second issue may turn out to be much more important for a number of reasons.

First, because as has already been shown in the previous section, it is quite difficult to find a purely economic motive that would lead SWF to invest significant amounts of their resources to European debt markets. In other words, if SWF do assume the role of the lender of last resort in an attempt to bring stability back to the European economy, such a course of action could hardly be conceived as anything but a political decision, even if it may have an indirect positive effect on their domestic economies. And if it is taken into account that SWF investments in what were considered strategic sectors of the economy had in the past caused certain unrest and led to discussions on the creation of a strict regulatory framework (Gilson & Milhaupt 2008, Barysch et al. 2008, Thatcher 2012), similar or even more intense reactions are not hard to imagine if SWF come to control a non-negligible part of European sovereign debt.

Second, because such reactions may be even stronger given that in the specific case that is being considered the main beneficiaries of SWF investments will be the economically weaker, hence allegedly more amenable to creditors' pressures, EU nations. If moreover, these investments prove critical to these nations' debt refinancing and to the stability of their debt markets, they may even be viewed as a Trojan Horse used by SWF in order to promote their national interests by influencing the decisions of EU member states. As a result, fears may ensue concerning the EU's eventual vulnerability to decisions made and strategies followed by sovereign states outside the Union. Moreover, it hardly needs to be argued that the important differences that have already developed within the euro area between creditor and debtor nations as a result of the crisis and of the manner in which it has been managed, will probably act so as to further diminish trust and the possibility of genuine cooperation among EU member states, thus increasing the tensions in their relationships and making it even harder for them to reach a common ground.

Another factor that may possibly strengthen the reactions to the considered SWF investments, as well as the tension among creditor and debtor nations within the EU, lies in the possibility that these investments will be viewed as possessing a geopolitical flavour, especially if they originate to a significant extent in Russia or China. In this case, the possible willingness of Southern member states to accept these investments and perhaps to even contemplate the creation of stronger relationships with the countries of origin could be viewed by their Northern partners as an extortion towards alternative arrangements that would benefit the debtor nations. This is especially so with respect to the role of the European Central Bank, since the latter would normally assume the role of the lender of last resort in the context of a more integrated union. However, under the current circumstances and the given degree of integration that the euro area has achieved, a modification of this role along more "federal" lines would be presumably met with fierce opposition, especially if debtor nations attempted to use SWF investments as a bargaining weapon.

As a result, a situation like the one that is envisaged here will give rise to difficult dilemmas for both debtor and creditor nations of the euro area. As far as the former are concerned, the dilemma would arise between taking full advantage of a possibility that is offered to them at a time when they most certainly need one and risking a further deterioration of their relationship to their EU partners, this risk being even greater if these partners are the ones that have been financing their debt through bilateral loans and have been ensuring the provision of liquidity to their banking systems through ECB's refinancing operations. As far as the latter are concerned, the dilemma would arise between letting SWF take some of the financing burden and risking the possibility of non-member states indirectly acquiring a voice with respect to the Union's policies and arrangements (Roller & Veron 2008). It is impossible to predict what the answers to these dilemmas will turn out to be. But it seems highly plausible that such a situation will result to a widening gap between creditors and debtors, especially if – as is often the case in turbulent times – the several parties' decisions come to be shaped to an increasing degree by narrow national interests.

A final point deserves to be mentioned concerning possible reactions to SWF investments in European debt markets. Besides the tensions that could ensue for the reasons outlined above, an SWF intervention to salvage the eurozone from its debt crisis could also be seen as an indication and a symptom of Europe's political, economic and institutional rigidity, if not outright decay, and its inability to move forward towards a more integrated union. Even more pessimistically, it could be seen as a confirmation of economic and political power shifting away from western societies and as a critical milestone along this process of transition. It could therefore cause not only tensions, suspicions and disagreements, but also a deep disappointment with a Union that is made up of some of the most advanced economies in the world, yet is totally incapable of taking care of its own problems even in that field that was traditionally considered as its strong point, i.e. its economic integration.

It is probably true that such pessimism would constitute an exaggeration. But this is more or less the case for the rest of the possible reactions that were described in the previous paragraphs. However, this does not necessarily diminish their importance, not does it imply that such reactions will not be observed. Even if exaggerated, the aforementioned fears and suspicions are likely to be widely adopted in the context of EU dialogue. And even if they may turn out to be more important at a symbolic rather than a practical level, they do reflect actual issues that need to be resolved.

Section VI: An overall assessment

The main antinomy that has been described in the previous sections lies in the fact that while from an economic point of view large-scale SWF investments would be desirable but not properly motivated, from a political point of view a motivation for them can be found but it is their desirability that becomes ambiguous. The difficulties implied may even be enhanced due to the fact that political reactions may ensue even if SWF decide to invest massively on European debt on the basis of purely economic criteria. We have argued that such a development would be highly improbable, but even if it were not, the insufficient information traditionally disclosed by SWF and the bitter experiences of the past[8] would probably constitute impediments to an understanding between the two sides.

Actually, it could be the case that the above considerations, or at least some of them, may provide with a reason why such investments by SWF have not yet taken place to any significant extent despite both the need for them and the not inconsiderable returns they would have yielded in the midst of the sovereign debt crisis. However, these considerations do not rule out the possibility of some SWF intervention to the extent that the worst phases of the European sovereign debt crisis have passed by, especially if this intervention is not exclusively focused on the refinancing of Southern European debt.

The potential role of the ECB has already been mentioned and would be of particular importance in this context, in the sense that the several schemes that it has employed in the previous years and that it continues to employ (Longer-term Refinancing Operations, Outright Monetary Transactions, Quantitative Easing) had a considerable effect in the management of the crisis and have probably prevented outcomes far worse than what the European economy has experienced. To the extent that the ECB continues to play such a role, it is possible that the lender-of-last-resort burden will be removed from the SWF

[8] Such as the attempts at strictly regulating SWF investments in the U.S., the negotiations leading to the Santiago Principles and of course the heavy losses that SWF suffered from their investments in Western financial institutions.

back, without this being necessarily understood as a retreat of creditor nations in the EU against their partners in the South. In such a case, SWF may be both able and willing to participate in European debt markets in the process of diversifying their portfolios, counterbalancing other, probably riskier, investments, and securing a future stream of not inconsiderable earnings. At the same time, given that their role will not be central, the reservations expressed against this participation will probably diminish and so will the possibility of this participation leading to increased tensions within the EU.

Therefore, the overall assessment is not necessarily as bleak as the discussion of the previous section might have implied. Although it is true that the idea of SWF stepping in and salvaging the eurozone from its crisis is politically and economically untenable, the idea of them playing a non-leading role in the stabilization and regularity of EU debt sovereign markets is certainly not inconceivable. As has already been implied, this non-leading role need not be restricted to assisting EU member states in refinancing their debt, but it should probably remain a non-leading one in all other possible fields in order to avoid the reemergence of heated disputes that could hardly cause any good for either the EU or the SWF. In this context, future developments in the EU regulatory framework concerning SWF investments will naturally be of the highest importance (Epstein & Rose 2009, Thatcher 2012), not only because of the significance of this framework per se, but also because these developments will reveal to some extent whether the Union sees SWF as potential partners in the context of a common understanding or as potential enemies from whom it needs to be protected.

It could not be stressed too emphatically that this possibility towards an understanding and a mutually beneficial arrangement is plausible only to the extent that SWF do not assume – and are not expected to assume – a pivotal role in affairs that should be resolved within the EU institutional framework. If the EU member states manage to overcome at least the worst aspects of the crisis by themselves or if Europe is simply carried along some wave of growth in the global economy, then SWF can play a constructive role and contribute significantly to this recovery. If not, it is extremely doubtful whether they will possess the capacity or the willingness to bring about such recovery through their own actions alone.

Finally, it should be explicitly stated that the preceding discussion was based on the assumption of no significant changes taking place – at least in the immediate future – with respect to the internal structure and operation of the monetary union. It should be obvious that if such changes do take place, the potential impact of SWF investment, or even investment by BRICS, may increase quite substantially. An example of such a possible development can be provided by the guidelines included in the "Pavia Declaration" (Pavia Group 2015), especially the ones referring to the partial mutualization of European debt and the issuance of Eurobonds by the European Investment Bank in order to finance investment projects throughout the continent. If such a step were actually taken, then some of the political problems described above would probably be overcome, while, from the SWF point of view, a wide range of investment possibilities would open up, the risk of which would be rather negligible. In this manner, the role of European nations would no longer be restricted to their ongoing attempts to ensure the refinancing of a large debt under conditions of economic malaise. On the contrary, Europe as a whole could develop into a pivotal player in the process of recycling of global surpluses, providing with significant investment outlets and at the same time assisting its national economies in overcoming the present crisis through a policy focused on economic growth and on the expansion of employment.

Section VII: Concluding comments

The present study has attempted to assess the likelihood of SWF contributing in the context of the current eurozone economic problems, mainly through their more active participation in sovereign debt markets of the nations that were most severely hit by the crisis. The analysis of these nations' refinancing needs in the following years demonstrated that, under plausible assumptions, such participation could have a significant effect without requiring but a small fraction of the total resources that lie at the SWF disposal. However, although a substantial contribution by SWF is technically possible, it constitutes a rather unlikely outcome in view of both the incentives of these funds and the political reactions that could ensue in the context of the euro area.

To a significant extent, these incompatibilities that have been described in the previous sections can be seen as the result of bad timing, in two separate but related senses. First, in the sense that the presence and the influence of SWF in the global economy is a relatively recent phenomenon that seems to question or endanger certain aspects of liberal western capitalism and hence that still creates suspicions and tensions. Eventually of course, such tensions will most likely be resolved in one way or another, i.e. either through the full embedment of SWF in the edifice of financial markets or through the gradual rise of their respective nations and the unavoidable adaption of the global economy to a new context of operation. However, such resolutions usually require a relatively long period of time to fully work themselves out and at the present moment none of the two aforementioned possibilities seems to be imminent. Second, in the sense that the eurozone constitutes also a relatively recent phenomenon and one that has not yet managed to overcome certain antinomies built in its structure or to decide whether it constitutes just a common currency area or the founding stone towards a greater and deeper integration and unification.

In other words, the discussion of SWF potential role as a lender of last resort would be obviously superfluous if the eurozone was robust and unified enough to do without some such outside lender. And conversely, the discussions of SWF potential political agenda and of the threats truly or allegedly emanating therefrom would be construed as huge

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exaggerations had these Funds become an integral part of the global financial system. This is not meant to imply that the eurozone is bound to become more robust and unified in the future, nor that SWF will of necessity become indistinguishable from other forms of funds that operate in the global economy. All it is meant to imply is that the current period is a transitory one in more than one ways, even if it is still unknown where these transitions will eventually lead to. And that through transitory periods, serious problems may arise and persist despite the fact that their resolution is not a priori inconceivable.

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THE ABSTRACT OF THE PROJECT IS:

The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?'

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4	Fondation Nationale des Sciences Politiques	France
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