Finance Research Letters 62 (2024) 105200

Contents lists available at ScienceDirect

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

What explains the size of Sovereign Wealth Funds? A panel analysis (2008–2018)☆

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ARTICLE INFO

Keywords:
Sovereign Wealth Funds
Assets Under Management
Armed Conflict, MSCI World Index
Globalization
Jel Codes: F01
G15
G28

ABSTRACT

The objective of this study is to explicate the determinants that influence the size of Sovereign Wealth Funds (SWFs), with a particular focus on investigating the consequences arising from a country's engagement in a conflict. We exploit a panel of 28 SWFs for the period 2008–2018. In fact, of particular interest is the inverse correlation estimated between the size of SWFs and the participation of the originating country in armed conflicts. The quantitative reduction in the size of SWFs in the presence of an armed conflict has been estimated to range between 25 % and 37 %. One general finding is that the impact of financial market dynamics on the size of SWFs, while of comparable magnitude to the influence of the domestic economy, exhibits a greater degree of stability.

1. Introduction and background literature

The objective of this study is to explicate the determinants that influence the size of Sovereign Wealth Funds (SWFs), with a particular focus on investigating the consequences arising from the engagement of the originating country into an armed conflict. This constitutes a novelty with respect to the existing literature on SWFs.

As highlighted in the survey articles conducted by Mami (2023), Megginson and Gao (2020), Bahoo et al., (2020), Megginson and Fotak (2015), and Alhashel (2015), the predominant body of literature on SWFs revolves around four themes: (i) the investment strategies of SWFs [see among others Megginson et al., (2023), Murtinu et al., (2023), Amar et al., (2022), Dai et al., (2022), Elbadawi et al., (2020), Debarsy et al., (2017), Ciarlone and Miceli (2016),Bernstein et al., (2013)]; (ii) the establishment of SWFs [Megginson et al., (2021); Eldredge (2019)]; (iii) the political and governance dimensions associated with SWFs [Cuervo-Cazurra et al., (2023), Amar and Lecourt (2023), Avendaño and Santiso(2011), Grira (2020), Calluzzo et al., (2017), Clarke (2016), Lenihan (2014), Balding (2012), Gilson and Milhaupt (2009), Wu and Seah (2008)]; (iv) the performance of SWFs investments [Chen et al., (2023), Ghouma and Ouni (2022), Bortolotti et al., (2015)].

Differently from the prevailing literature, we examine the determinants of SWFs size, with a specific emphasis on the involvement of the originating country in an armed conflict. Our work is related with Aizenman and Glick (2009) and Di Bonaventura Altuve (2024). In the former, the authors emphasize that the size of SWFs correlates with macroeconomic elements, such as a surplus in the current account balance, as well as socio-political factors, with political stability being a notable component. Conversely, in the latter,

☆ We thank three anonymous referees and the editor for comments which improved significantly the paper.
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https://doi.org/10.1016/j.frl.2024.105200
Received 6 August 2023; Received in revised form 27 February 2024; Accepted 1 March 2024
Available online 5 March 2024

the author elucidates how political instability may lead to the depletion of SWFs. However, these referenced studies primarily consider domestic political stability. Most studies do not account for the potential impact of a major international political situation, such as participation in an armed conflict, on SWFs. Only Grira et al., (2022) and Wang et al., (2021) study the impact of conflict on the investment strategies of SWFs. Both studies emphasize a detrimental effect of conflict on the likelihood of investments. However, to the best of our knowledge, a significant gap in the existing literature is the absence of studies specifically focusing on the correlation between engagement in armed conflicts and determinations related to the size of SWFs.

We contribute to fill this gap by exploiting a panel of 28 SWFs from 22 countries for the period 2008–2018. We investigate whether the participation into an armed conflict has an impact on the size. Albeit presumably negative, the relationship cannot be predicted with absolute certainty. On one hand, the existence of an armed conflict may deplete resources, leading to a negative association with the size of the SWFs. On the other hand, the government may increase the assets of the fund, akin to an insurance mechanism, as a precautionary measure to mitigate potential adverse impacts on the economy. In general, our analysis considers two sets of factors to explain the dependent variable: country-specific determinants, comprising economic performance, socio-economic stability proxies, and the country's inclination towards international integration; and global determinants. In particular, we first seek to distinguish whether the SWFs size is predominantly explained by the GDP, which represents the long-term capability of the government to increase the size of a SWF, or if it depends mainly upon the dynamics of global financial markets captured through the MSCI World Index.

The paper is organized as follows: initially, we provide a description of the data. Subsequently, we elucidate the empirical model, followed by the presentation and discussion of results. The conclusions summarise the findings and propose a connection between them and the current economic landscape.

2. The data, the empirical strategy and the results

2.1. The data

The estimation aims to highlight relationships between the size of SWFs - measured as Assets Under Management (hereafter AUM) - and a parsimonious set of variables. Our analysis considers two sets of factors to explain the dependent variable: country-specific determinants, comprising economic performance, socio-economic stability proxies, and the country's inclination towards international integration; and global determinants.[1] As main variable, first, we examine the association between GDP and the size of SWFs. As SWFs are funded by public resources, it is plausible that wealthier countries may have larger SWFs. Fig. 1 presents a scatter plot between the two variables, revealing distinct patterns in their relationship. Different icons denote different funds. In general, a predominant positive association between the GDP and SWFs is observed.

To consider the capability of the government to increase the AUM we also employ as controls two macroeconomic variables. Drawing insights from Aizenman and Glick (2009) we control the relationship between AUM and the percentage ratio of current account balance on GDP. A surplus of the current account would reflect a better capability to fund domestic economic activity and therefore also that of increasing the size of SWFs. We also consider the level of unemployment since it can be intended to constitute a constraint on governments as they may need to allocate resources towards social welfare programs. Subsequently, to assess the relationship between SWF size and financial market dynamics, we utilize the MSCI World Index, which currently serves as the benchmark index for global stock markets. [see for instance Kakran et al., (2023), Omura et al., (2021),Bae et al., (2019); Goel et al., (2017), de Jong and de Roon (2005)]. Then we also added two variables which capture the international integration and the socio-political scenario of the country, namely:

(i) the participation into an armed conflict. We employ a dummy variable that takes a value of 1 if the originating country is involved in an armed conflict and 0 otherwise. The source is the UCDP/Prio Armed Conflict dataset. The relationship between armed conflicts and the size of SWFs lacks definitive expectations. On one hand, during the occurrence of an armed conflict, governments may seek to stabilize the economy and safeguard savings for the future, potentially leading to a positive association between armed conflicts and SWFs' size. On the other hand, a plausible diversion effect might prevail over the aforementioned stabilization effect. In fact, when governments allocate resources to tackle the conflict, it is improbable that they will also augment the allocation of resources to other areas or sectors [see among others Pempetzoglou (2021), van den Boogaard et al. (2018), Fitzgerald (1997)]. It is also acknowledged that armed conflicts lead to increased volatility and negative returns in stock markets [see among others Tajaddini and Gholipour (2023); Kakran et al., (2023); Boubaker et al., (2022); Boungou and Yatié (2022); Aslam et al., (2021), Schneider and Troeger (2006)].

(ii) the KOF Globalization index which captures the degree of openness and integration of a country with respect to the rest of the world. The KOF is a composite index that measures globalisation along the economic, social and political dimension on a scale of 1 (least) to 100 (most globalised). The index was introduced by Dreher (2006) and updated by Gygli et al., (2019). We expect a positive association with the size of SWFs. This would present an alternative perspective to the one delineated by Aggarwal and Goodell (2018), which underscored the significant influence of national culture on the management of SWFs;

Table 1 reports the descriptive statistics whereas the correlation matrix is reported in the appendix.

[1] Please see the appendix for a concise graphical model.

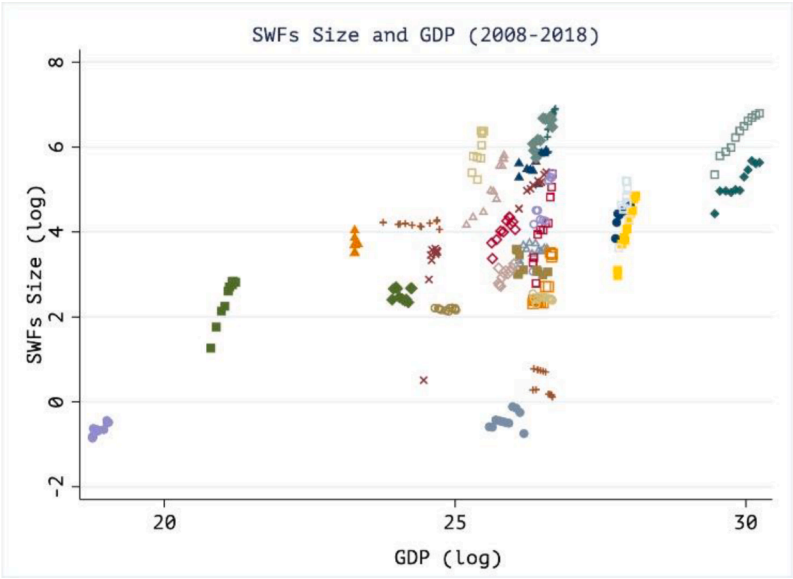


Fig. 1. SWF Size and GDP 2008–2018 (22 countries).

2.2. The regression model

We exploit a panel dataset comprising 28 SWFs over the period 2008–2018. We employ a static panel model because the panel size is relatively small and because the dependent variable appears to be stationary. We report the test of stationarity in the appendix. Moreover, as pointed out in Drukker (2003), the test to detect serial correlation is not reliable with small sizes. In brief, the choice of a static panel approach seems to be appropriate. The model is:

$$AUM_{kit} = \alpha_{it} + \beta_1 GDP_{it} + \beta_2 MSCI_t + \beta_3 Z_{it} + \beta_4 X_{it} + \varepsilon_{it}, \quad (1)$$

Where AUM_{kit} denotes the log of size of SWF k of country $i$at time t, GDP_{it} denotes the log of GDP in constant 2015 US dollars, $Z_{it}$is the vector including the existence of conflict and the globalization index, X_{it} is the vector which includes the log of the percentage ratio between the current account balance and the GDP and the log of unemployment rate and ε_{it} is the error term. The intercept is:

$$\alpha_{it} = \alpha + \mu_i + \tau_t, \quad (2)$$

whereas μ_i and τ_t are the error terms associated with the cross-section and time. The hypothesis is that the intercept may vary across both cross-sectional units and time periods. First, we test for the existence of cross-section and time effects to evaluate the correct specification of the regression. The Lagrange multiplier tests for random effects support our hypothesis of both individual and time effects (Breusch and Pagan, 1980). The tests are reported in the appendix.

2.3. The results

In table 2 we present the results. First, we include the GDP and we progressively added the other variables. To avoid perfect

Table 1
Descriptive statistics.

Variable	Definition	Sources	Obs.	Mean	St. Dev.	Min	Max
SWF (log)	Log of Asset Under Management in USD billions	Report SWF – SIL Bocconi University[1]	308	3.731	1.888	-0.85	6.91
GDP (log)	Log of GDP in constant 2015 USD billions	WDI, World Bank	308	25.866	2.208	18.76	30.23
MSCI WI (log)	Log of MSCI World Index 2008 = 100	MSCI	11	5.211	0.333	4.61	5.67
Globalization Index	0 - Low; 100 – High	KOF	308	69.242	11.149	37.06	85.95
Conflict	Dummy =1 if there is an armed conflict	UCDP/Prio Armed Conflict dataset	308	0.084	0.278	0	1
Current account balance (log)	Log of Current account balance (% of GDP)	WDI, World Bank	179	2.034	1.439	-4.36	5.74
Unemployment	Log of unemployment rate	WDI, World Bank	296	1.200	0.800	-2.21	2.98

[1] SWF SIL Reports can be found at https://baffi.unibocconi.eu/research-units/sil/reports. (accessed 06/11/2023).

collinearity we estimated the regression without time fixed effects in multivariate models. We present both fixed and random effects estimations. The Hausman test suggests that RE estimation is suitable for models lacking macroeconomic controls, whereas FE models should be employed once these controls are incorporated (models 4 and 8). Regrettably, the latter models suffer from a reduced number of observations due to limited data availability.

First, the GDP is positively associated with the size of SWFs. Such association is significant at 1 % in RE models without macroeconomic controls and in FE models without controls. Since we consider the log transformations, the coefficients can be interpreted as elasticities. The elasticity with respect of GDP is around 0.5 % in models 1 and 2 with RE, and 0.6 % in models 5 and 6 with FE. In models 3 and 4, this elasticity decreases, ranging between 0.2 % and 0.3 % in RE estimation only whereas in models 7 and 8 GDP loses its statistical significance. In sum, the most reliable estimation we would claim is that an increase of 1 % of GDP is associated with an increase in size of SWFs which ranges between 0.3 % and 0.6 %. However, such impact is not confirmed in the FE models including control variables. Furthermore, the dynamics of stock markets influence the size of SWFs. The MSCI World Index is positively associated with the size of SWFs. Such association is highly significant at 1 % level in all models. Looking at the quantitative effect an increase of 1 % of MSCI is associated with a 0.5 % increase of size of SWFs. The estimated quantitative impact is confirmed across the various estimations, specifically falling within the range of 0.47 % to 0.56 %.

Socio-political factors also appear to be significantly associated with the size of SWFs. The association between AUM and conflict is negative and highly significant (at 1 % level) in all models. Employing the estimator proposed by Kennedy (1981) for dummy variables in log-linear models we find that the partecipation into an armed conflict is associated with a decrease in AUM by 24.8 % and 32.7 %, in models 3 and 4, and by 27.7 % and 37.4 % in models 7 and 8 respectively. In brief, armed conflicts have a substantial negative impact on the AUM of the SWFs. The KOF index is positively associated with the size of SWFs. However, such association appears to be stronger in RE models (significant at 1 % level) than FE models (significant at 10 %). In particular, an increase of 1 unit in the Globalization Index results in a size increase of SWFs of about 0.04 %. Of notable magnitude are the negative coefficients associated with the existence of an armed conflict in both RE and FE estimations. It must be noted that with the inclusion of these variables the magnitudes of the coefficients associated with GDP and MSCI index decrease. As mentioned above, due to the data scarcity, we have included as macroeconomic controls the current account balance and level of unemployment in models 4 and 8 only, but the coefficients are not statistically significant. The latter results seem to suggest that macroeconomic factors are less influential in explaining the size of SWFs with respect to socio-political factors.

In summary, our estimations yield nuanced evidence. On one hand, it is reaffirmed that GDP reflects a government's long-term capacity to augment the size of a SWF. However, significantly – in model 8 – GDP has also lost its statistical significance.

Table 2
Panel estimation; dependent variable: Size of the SWFs (log), 2008–2018.

	Random Effects[a]				Fixed Effects[b]			
Models	1	2	3	4	5	6	7	8
GDP (log)	0.498***	0.505***	0.295**	0.219*	0.587***	0.600**	0.199	0.021
	(0.113	(0.111)	(0.125)	(0.123)	(0.190)	(0.225)	(0.311)	(0.327)
MSCI World Index (log)		0.557***	0.467 ***	0.518***		0.525***	0.491***	0.556***
		(0.070)	(0.080)	(0.101)		(0.111)	(0.128)	(0.160)
KOF Globalization Index			0.042***	0.046***			0.044*	0.050*
			(0.013)	(0.015)			(0.024)	(0.024)
Conflict			-0.285**	-0.396***			-0.325***	-0.468***
			(0.125)	(0.133)			(0.110)	(0.128)
Current account balance (% of GDP) (log)				-0.034				-0.043
				(0.030)				(0.030)
Unemployment (log)				0.034				-0.038
				(0.128)				(0.152)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	NO	NO	NO	YES	NO	NO	NO
Observations	308	308	308	172	308	308	308	172
Countries	28	28	28	19	28	28	28	19
R_sq_within	0.390	0.367	0.397	0.462	0.390	0.368	0.398	0.465
R_sq_between	0.294	0.294	0.305	0.246	0.294	0.294	0.289	0.148
R_sq_overall	0.298	0.297	0.309	0.290	0.297	0.296	0.293	0.182
corr (u_i, Xb)					-0.182	-0.199	0.095	-0.008
Wald test	183.09	172.49	193.98	126.51				
Prob	(0.000)	(0.000)	(0.000)	(0.000)				
F-Stat on model specification					4.20	15.65	11.57	9.53
Prob					(0.000)	(0.000)	(0.000)	(0.000)
F-Stat of redundant time effects	33.35				4.67			
Prob	(0.000)				(0.000)			
Rho	0.96	0.96	0.96	0.93	0.96	0.96	0.96	0.96
Hausman test	0.303	0.385	1.164	18.438				
Prob	(0.582)	(0.825)	(0.884)	(0.001)				

[a] Swamy and Arora estimator of component variances.
[b] Std. Err. (in brackets) adjusted for clusters. Statistical significance ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.

Concurrently, the performance of global financial markets, exerts a more stable and predictable influence on the size of SWFs. When GDP loses statistical significance, it appears to underscore the importance of global financial dynamics and socio-political factors as the primary drivers that explain the size of SWFs. Moreover, within this expanded model, it appears that the other macroeconomic variables under consideration do not exhibit any notable impact. Consequently, political factors emerge as the predominant influencers. In the light of the relevant negative impact of the conflict variable, presumably there is a substantial diversionary effect, wherein public resources are directed towards conflict-related expenditures and other items of public spending, rather than being channeled into state-owned funds. Furthermore, the perceived instability arising from conflicts may diminish the allure of nations' funds, consequently resulting in a decline in inbound investments. Remarkably, our findings diverge from those of Aizenman and Glick (2009) that while not revealing any statistically significant relationship with a measure of political stability, it did indicate a strong explanatory link with the current account balance.

3. Conclusion

This paper has analyzed some factors associated with the size of SWFs defined as the AUM. Remarkably, among the key-results, it is shown that the participation of originating countries into an armed conflict significantly impedes the potential growth of AUM for SWFs. The quantitative reduction in the size of SWFs in the presence of an armed conflict has been estimated to range between 25 % and 37 %. Alongside the impact of financial market dynamics and domestic economy on the size of SWFs, findings also point out that other socio-political factors play a role in explaining the size of SWFs. Indeed, it seems that international integration may exert a positive influence. In broader terms, this evidence substantiates the significant influence of political factors on the size of SWFs. Overall, the outcome concerning the impact of involvement in an armed conflict is notably significant and warrants further investigation, notwithstanding the reliance on evidence from a relatively small panel. To address the limitations of this study, future research could encompass broader fund panels and consider various types of conflicts and international tensions.

Looking ahead, numerous armed conflicts have emerged or intensified. This would imply that there may be limited potential for further expansion in the size for some SWFs. In other words, the prevailing global instability could impede the rate of further asset accumulation by existing SWFs. Furthermore, this evidence also helps to elucidate why SWFs managers recently may alter their investment strategies. As explained in Bortolotti et al. (2023) , Ayoubi and Enjolras (2022) the orientation towards sustainable investments by SWFs has experienced a dramatic increase in the light of positive financial performance of ESG-driven corporations [see among others Rao et al., 2023 ;Chen et al., 2023].

CRediT authorship contribution statement

Anna Balestra: Writing – review & editing, Methodology, Data curation, Conceptualization, Investigation, Writing – original draft. **Raul Caruso:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Conceptualization. **Marco Di Domizio:** Methodology, Data curation.

Declaration of competing interest

The authors declare no conflict of interest.

Data availability

Data will be made available on request.

Appendix

See Table A1

Table A1
SWFs included in the panel.

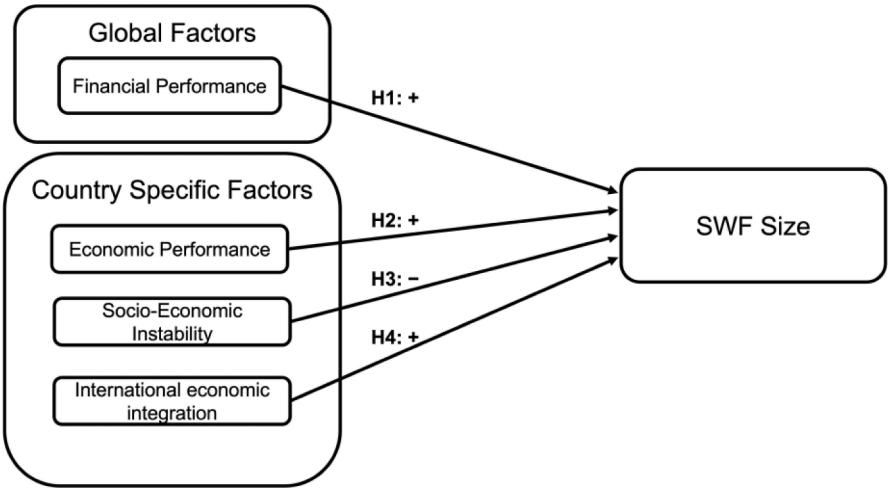
SWF	Country
Future Fund	Australia
State Oil Fund of Azerbaijan (SOFAZ)	Azerbaijian
Mumtalakat Holding Company	Bahrain
Brunei Investment Agency (BIA)	Brunei
China Investment Corporation (CIC)	China
Kazakhstan National Fund	Kazakhstan
Revenue Equalization Reserve Fund	Kiribati
Kuwait Investment Authority	Kuwait

(*continued on next page*)

Table A1 (*continued*)

SWF	Country
Libyan Investment Authority	Libya
Khazanah Nasional Bhd	Malaysia
Government Pension Fund - Global	Norway
State General Reserve Fund	Oman
Qatar Invesment Authority (QIA)	Qatar
Korea Investment Corporation (KIC)	Republic of Korea
National Wealth Fund	Russia
Government of Singapore Investment Corporation (GIC)	Singapore
Temasek Holdings	Singapore
Petroleum Fund	Timor-Leste
Emirates Investment Authority	UAE
Abu Dhabi Investment Authority (ADIA)	UAE/Abu Dhabi
Mubadala Development Company	UAE/Abu Dhabi
Investment Corporation of Dubai (ICD)	UAE/Dubai
Istithmar World	UAE/Dubai
RAK Investment Authority	UAE/Ras Al Khaimah
State Capital Investment Corporation	Vietnam
National Social Security Fund (NSSF)	China
National Pensions Reserve Fund (NPRF)	Ireland
New Zealand Superannuation Fund	New Zealand

A2. The conceptual model in graphical format



A3 Correlation Matrix

See para Table A3

Table A3
Correlation analysis. Method: Ordinary. Pairwise samples with 308 included observations. Probabilities in perentheses.

	SWF (log)	GDP (log)	MSCI World Index (log)	KOF Globalization Index	Conflict	Current Account Balance ((% of GDP) (log)	Unemployment (log)
SWF (log)	1.000						
	—						
GDP (log)	0.536	1.000					
	(0.000)	—					
MSCI World Index (log)	0.122	0.048	1.000				
	(0.032)	(0.396)	—				
KOF Globalization Index	0.458	0.614	0.113	1.000			
	(0.000)	(0.000)	(0.049)	—			
Conflict	0.071	0.055	0.015	-0.160	1.000		
	(0.217)	(0.337)	(0.794)	(0.005)	—		

(*continued on next page*)

Table A3 (*continued*)

	SWF (log)	GDP (log)	MSCI World Index (log)	KOF Globalization Index	Conflict	Current Account Balance ((% of GDP) (log)	Unemployment (log)
Current Account Balance (% of GDP) (log)	-0.005	-0.482	-0.151	-0.133	-0.094	1.000	
	(0.947)	(0.000)	(0.043)	(0.074)	(0.208)	—	
Unemployment (log)	0.083	-0.001	-0.050	-0.120	0.328	-0.069	1.000
	(0.155)	(0.988)	(0.395)	(0.039)	(0.000)	(0.370)	—

A4 Stationarity test on the dependent variable

We perform four stationarity tests on the logged value of dependent variable; the first test, the Levin, Lin & Chu (LLC) assumes common unit root process for all cross sections, while the others three, the Im, Pesaran and Shin (IPS), the Augmented Dickey-Fuller (ADF), and the Phillips-Perron (PP) assume individual unit root process. All tests were carried out assuming individual intercepts with an automatic lag length selection based on Akaike Info Criterion (0 to 1), the Newey-West automatic bandwidth selection and Bartlett kernel. The same tests were replicated assuming individual intercepts and a linear trend, and in this case the Breitung test is also added. The null hypotheses of common unit root and individual unit root process are strongly rejected as shown in the following table, with the exemption of the Breitung test.

Panel Unit Root Test: dependent variable - Individual intercepts				
Method	Statistic	Probability	Cross Sections	Obs
	Null Hypothesis: Common Unit Root Process			
LLC t-stat	-34.919	0.000	28	275
	Null Hypothesis: Individual Unit Root Process			
IPS W-stat	-13.803	0.000	28	275
ADF Chi-square	141.697	0.000	28	275
PP Chi-square	161.344	0.000	28	280
Panel Unit Root Test: . Individual intercepts and linear trends				
Method	Statistic	Probability	Cross Sections	Obs
	Null Hypothesis: Common Unit Root Process			
LLC t-stat	-33.494	0.000	28	270
Breitung t-stat	0.490	0.688	28	242
	Null Hypothesis: Individual Unit Root Process			
IPS W-stat	-9.509	0.000	28	270
ADF Chi-square	148.935	0.000	28	270
PP Chi-square	156.161	0.000	28	280

A5 - Lagrange Multiplier Tests for Random Effects

See Table A5

Table A5
Lagrange Multiplier Tests for Random Effects. Null hypotheses: No effects. Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives. p-values in parentheses.

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1388.22	5.21	1393.43
	(0.000)	(0.023)	(0.000)
Honda	37.26	-2.28	24.73
	(0.000)	(0.989)	(0.000)
King-Wu	37.26	-2.28	17.42
	(0.000)	(0.989)	(0.000)
Standardized Honda	39.91	-2.04	23.01
	(0.000)	(0.980)	(0.000)
Standardized King-Wu	39.91	-2.04	15.41
	(0.000)	(0.980)	(0.000)
Gourieroux, et al.	–	–	1388.22
			(0.000)

A6 – Sensitivity Analysis

As sensitivity analysis, we conducted regression analyses following a temporal reduction of the time series by a duration of three

years. The outcomes are presented in Table A6 below, aligning with and validating the findings reported in Table 2.

Table A6
Panel estimation; dependent variable: Size of the SWFs (log), 2008–2015.[a].

	Random Effects [b]				Fixed Effects			
Models	1	2	3	4	1	2	3	4
GDP (log)	**0.509*****	**0.521*****	**0.286***	0.211	**0.673*****	**0.705****	0.182	-0.224
	(0.077)	(0.077)	(0.161)	(0.145)	(0.236)	(0.275)	(0.410)	(0.448)
MSCI World Index (log)		**0.615*****	**0.495*****	**0.587*****		**0.559*****	**0.505*****	**0.628*****
		(0.142)	(0.122)	(0.172)		(0.147)	(0.157)	(0.208)
KOF Globalization index			**0.048****	**0.055*****			**0.054***	**0.076****
			(0.021)	(0.020)			(0.030)	(0.035)
Conflict			**-0.321***	**-0.399****			**-0.367***	**-0.555****
			(0.174)	(0.197)			(0.192)	(0.207)
Balance of Payment on GDP (log)				-0.018				-0.033
				(0.023)				(0.032)
Unemployment (log)				-0.015				-0.250
				(0.176)				(0.245)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Period effects	YES	NO	NO	NO	YES	NO	NO	NO
Observations	224	224	224	132	224	224	224	132
Countries	28	28	28	19	28	28	28	19
R_sq_within	0.375	0.347	0.386	0.439	0.377	0.349	0.387	0.455
R_sq_between	0.300	0.300	0.315	0.244	0.300	0.300	0.293	0.019
R_sq_overall	0.302	0.301	0.317	0.310	0.301	0.300	0.297	0.030

[a] Robust Standard Errors (in brackets) adjusted for clusters.
[b] Swamy and Arora estimator of component variances.

References

Aggarwal, R., Goodell, J.W., 2018. Sovereign wealth fund governance and national culture. Int. Bus. Rev. 27, 78–92. https://doi.org/10.1016/j.ibusrev.2017.05.007.

Aizenman, J., Glick, R., 2009. Sovereign Wealth Funds: stylized Facts about their Determinants and Governance. Int. Finance 12, 351–386. https://doi.org/10.1111/j.1468-2362.2009.01249.x.

Ayoubi, Al, Enjolras, K., 2022. Does disinvestment from fossil fuels reduce the financial performance of responsible sovereign wealth funds? J. Multinational Financ. Manag. 64, 100731 https://doi.org/10.1016/j.mulfin.2022.100731.

Alhashel, B., 2015. Sovereign Wealth Funds: a literature review. J. Econ. Bus. 78, 1–13. https://doi.org/10.1016/j.jeconbus.2014.10.001.

Amar, J., Lecourt, C., 2023. Sovereign wealth fund governance: a trade-off between internal and external legitimacy. International Business Review 32, 102193. https://doi.org/10.1016/j.ibusrev.2023.102193.

Amar, J., Lecourt, C., Carpantier, J.F., 2022. GCC Sovereign Wealth Funds: why do they take control? J. Int. Financ. Markets, Institutions and Money 77, 101494. https://doi.org/10.1016/j.intfin.2021.101494.

Aslam, F., Kang, H.G., Mughal, K.S., Awan, T.M., Mohmand, Y.T., 2021. Stock Market Volatility and Terrorism: new Evidence from the Markov Switching Model. Peace Economics. Peace Sci. Public Policy 27, 263–284. https://doi.org/10.1515/peps-2020-0005.

Avendaño, R., Santiso, J., 2011. Are Sovereign Wealth Funds Politically Biased? A Comparison with other Institutional Investors 313–353. https://doi.org/10.1108/S1569-3767(2011)0000012015.

Bae, J.W., Elkamhi, R., Simutin, M., 2019. The Best of Both Worlds: accessing Emerging Economies via Developed Markets. J. Finance 74, 2579–2617. https://doi.org/10.1111/jofi.12817.

Bahoo, S., Alon, I., Paltrinieri, A., 2020. Sovereign wealth funds: past, present and future. Int. Rev. Financ. Anal. 67, 101418 https://doi.org/10.1016/j.irfa.2019.101418.

Balding, C., 2012. Sovereign Wealth Funds. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199842902.001.0001.

Bernstein, S., Lerner, J., Schoar, A., 2013. The Investment Strategies of Sovereign Wealth Funds. J. Econ. Perspectives 27, 219–238. https://doi.org/10.1257/jep.27.2.219.

Bortolotti, B., Fotak, V., Megginson, W.L., 2015. The Sovereign Wealth Fund Discount: evidence from Public Equity Investments. Rev. Financial Studies 28, 2993–3035. https://doi.org/10.1093/rfs/hhv036.

Bortolotti, B., Loss, G., van Zwieten, R.W., 2023. The times are they a-changin'? Tracking sovereign wealth funds' sustainable investing. Journal of International Business Policy 6, 276–305. https://doi.org/10.1057/s42214-023-00161-4.

Boubaker, S., Goodell, J.W., Pandey, D.K., Kumari, V., 2022. Heterogeneous impacts of wars on global equity markets: evidence from the invasion of Ukraine. Financ. Res. Lett. 48, 102934 https://doi.org/10.1016/j.frl.2022.102934.

Boungou, W., Yatié, A., 2022. The impact of the Ukraine–Russia war on world stock market returns. Econ. Lett. 215, 110516 https://doi.org/10.1016/j.econlet.2022.110516.

Breusch, T.S., Pagan, A.R., 1980. The Lagrange Multiplier Test and its Applications to Model Specification in Econometrics. Rev. Econ. Stud. 47, 239. https://doi.org/10.2307/2297111.

Calluzzo, P., Nathan Dong, G., Godsell, D., 2017. Sovereign wealth fund investments and the US political process. J. Int. Bus. Stud. 48, 222–243. https://doi.org/10.1057/s41267-016-0057-5.

Chen, R, Liu, (Ryan), Zhao, F., (Eddie), Y., 2023a. Sovereign wealth funds and cost of debt: evidence from syndicated loans. J. Corporate Finance 82, 102446. https://doi.org/10.1016/j.jcorpfin.2023.102446.

Chen, S., Song, Y., Gao, P., 2023b. Environmental, social, and governance (ESG) performance and financial outcomes: analyzing the impact of ESG on financial performance. J. Environ. Manage 345, 118829. https://doi.org/10.1016/j.jenvman.2023.118829.

Ciarlone, A., Miceli, V., 2016. Escaping financial crises? Macro evidence from sovereign wealth funds' investment behaviour. Emerg. Markets Rev. 27, 169–196. https://doi.org/10.1016/j.ememar.2016.05.004.

Clarke, W., 2016. Sovereign Patent Funds: sovereign Wealth Funds 2.0? Glob. Policy. 7, 577–583. https://doi.org/10.1111/1758-5899.12353.
Cuervo-Cazurra, A., Grosman, A., Megginson, W.L., 2023. A review of the internationalization of state-owned firms and sovereign wealth funds: governments' nonbusiness objectives and discreet power. J. Int. Bus. Stud. 54, 78–106. https://doi.org/10.1057/s41267-022-00522-w.
Dai, L., Song, C., You, Y., Zhang, W., 2022. Do sovereign wealth funds value ESG engagement? Evidence from target firm's CSR performance. Financ. Res. Lett. 50, 103226 https://doi.org/10.1016/j.frl.2022.103226.
de Jong, F., de Roon, F.A., 2005. Time-varying market integration and expected returns in emerging markets. J. Financ. Econ. 78, 583–613. https://doi.org/10.1016/j.jfineco.2004.10.010.
Debarsy, N., Gnabo, J.Y., Kerkour, M., 2017. Sovereign wealth funds' cross-border investments: assessing the role of country-level drivers and spatial competition. J. Int. Money. Finance 76, 68–87. https://doi.org/10.1016/j.jimonfin.2017.05.007.
Di Bonaventura Altuve, L., 2024. The demise of sovereign wealth funds. Rev. Int. Polit. Econ. 31, 277–303. https://doi.org/10.1080/09692290.2023.2190601.
Dreher, A., 2006. Does globalization affect growth? Evidence from a new index of globalization. Appl. Econ. 38, 1091–1110. https://doi.org/10.1080/00036840500392078.
Drukker, D.M., 2003. Testing for Serial Correlation in Linear Panel-data Models. The Stata J.: Promoting communications on statistics and Stata 3, 168–177. https://doi.org/10.1177/1536867X0300300206.
Elbadawi, I., Soto, R., Zaki, C., 2020. Sovereign wealth funds and cross-border investment bias: the case of Arab countries. Middle East. Dev. J. 12, 1–23. https://doi.org/10.1080/17938120.2020.1716429.
Eldredge, C.D., 2019. Capability and need: a framework for understanding why states create sovereign wealth funds. World Econ. 42, 1495–1519. https://doi.org/10.1111/twec.12761.
Fitzgerald, E.V.K., 1997. Paying for the war: macroeconomic stabilization in poor countries under conflict conditions. Oxford Development Studies 25, 43–65. https://doi.org/10.1080/13600819708424121.
Ghouma, H.H., Ouni, Z., 2022. SWF investments and debt maturity of target firms: an international evidence. Financ. Res. Lett. 46, 102312 https://doi.org/10.1016/j.frl.2021.102312.
Gilson, R.J., Milhaupt, C.J., 2009. Sovereign Wealth Funds and Corporate Governance : a Minimalist Response to the New Mercantilism. Revue d'économie financière (English ed.) 9, 345–362. https://doi.org/10.3406/ecofi.2009.5520.
Goel, S., Cagle, S., Shawky, H., 2017. How vulnerable are international financial markets to terrorism? An empirical study based on terrorist incidents worldwide. Journal of Financial Stability 33, 120–132. https://doi.org/10.1016/j.jfs.2017.11.001.
Grira, J., 2020. Back to government ownership: the Sovereign Wealth Funds phenomenon. Financ. Res. Lett. 34, 101245 https://doi.org/10.1016/j.frl.2019.07.018.
Grira, J., Labidi, C., Rouatbi, W., 2022. Does political risk matter for sovereign wealth funds? International evidence. Int. Rev. Financ. Anal. 81, 101236 https://doi.org/10.1016/j.irfa.2018.07.013.
Gygli, S., Haelg, F., Potrafke, N., Sturm, J.-.E., 2019. The KOF Globalisation Index – revisited. The Review of International Organizations 14, 543–574. 10.1007/s11558-019-09344-2.
Kakran, S., Sidhu, A., Bajaj, P.K., Dagar, V., 2023. Novel evidence from APEC countries on stock market integration and volatility spillover: a Diebold and Yilmaz approach. Cogent Econ. Finance 11. https://doi.org/10.1080/23322039.2023.2254560.
Kennedy, P., 1981. Estimation with Correctly Interpreted Dummy Variables in Semilogarithmic Equations [The Interpretation of Dummy Variables in Semilogarithmic Equations]. American Econ. Rev. 71, 801.
Lenihan, A.T., 2014. Sovereign Wealth Funds and the Acquisition of Power. New Political Econ. 19, 227–257. https://doi.org/10.1080/13563467.2013.779650.
Mami, E., 2023. The role of sovereign wealth funds in natural resource-rich countries: a systematic meta-narrative review. J. Int. Bus. Policy 6, 356–371. https://doi.org/10.1057/s42214-023-00159-y.
Megginson, W.L., Fotak, V., 2015. Rise of the fiduciary state: a survey of sovereign wealth fund research. J. Econ. Surv. 29, 733–778. https://doi.org/10.1111/joes.12125.
Megginson, W.L., Gao, X., 2020. The state of research on sovereign wealth funds. Global Finance J. 44, 100466 https://doi.org/10.1016/j.gfj.2019.03.003.
Megginson, W.L., Lopez, D., Malik, A.I., 2021. The Rise of State-Owned Investors: sovereign Wealth Funds and Public Pension Funds. Annual Rev. Financial Econ. 13, 247–270. https://doi.org/10.1146/annurev-financial-110420-090352.
Megginson, W.L., Malik, A.I., Zhou, X.Y., 2023. Sovereign wealth funds in the post-pandemic era. J. Int. Bus. Policy 6, 253–275. https://doi.org/10.1057/s42214-023-00155-2.
Murtinu, S., Scalera, V.G., Strange, R., 2023. Cross-border acquisitions by sovereign wealth funds: a legitimacy-based view. Global Strategy J. 13, 888–926. https://doi.org/10.1002/gsj.1496.
Omura, A., Roca, E., Nakai, M., 2021. Does responsible investing pay during economic downturns: evidence from the COVID-19 pandemic. Financ. Res. Lett. 42, 101914 https://doi.org/10.1016/j.frl.2020.101914.
Pempetzoglou, M., 2021. A Literature Survey on Defense Expenditures – External Debt Nexus. Peace Econ. Peace Sci. Public Policy. 27, 119–141. https://doi.org/10.1515/peps-2019-0049.
Rao, A., Dagar, V., Sohag, K., Dagher, L., Tanin, T.I., 2023. Good for the planet, good for the wallet: the ESG impact on financial performance in India. Financ. Res. Lett. 56, 104093 https://doi.org/10.1016/j.frl.2023.104093.
Schneider, G., Troeger, V.E., 2006. War and the World Economy. J. Conflict Resolution 50, 623–645. https://doi.org/10.1177/0022002706290430.
Tajaddini, R., Gholipour, H.F., 2023. Trade dependence and stock market reaction to the Russia-Ukraine war. Int. Rev. Finance 23, 680–691. https://doi.org/10.1111/irfi.12414.
van den Boogaard, V., Prichard, W., Benson, M.S., Milicic, N., 2018. Tax Revenue Mobilization in Conflict-affected Developing Countries. J. Int. Dev. 30, 345–364. https://doi.org/10.1002/jid.3352.
Wang, D., Weiner, R.J., Li, Q., Jandhyala, S., 2021. Leviathan as foreign investor: geopolitics and sovereign wealth funds. J. Int. Bus. Stud. 52, 1238–1255. https://doi.org/10.1057/s41267-021-00415-4.
Wu, F., Seah, A., 2008. Would China's Sovereign Wealth Fund Be a Menace to the USA? China & World Econ. 16, 33–47. https://doi.org/10.1111/j.1749-124X.2008.00120.x.