Taming Leviathan: Mitigating Political Interference in Sovereign Wealth Funds' Public Equity Investments

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Keywords: Sovereign wealth fund, state ownership

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Extant research finds that targets of sovereign wealth fund (SWF) investments experience a weaker stock price reaction at investment announcement than targets of private-sector investments. We investigate the determinants of this "SWF discount" and possible mitigating mechanisms. We find that SWFs from non-democratic countries can mitigate this discount by signaling a passive stance by investing through subsidiaries, buying small stakes, and refraining from acquiring control. Conversely, SWFs from democratic countries suffer from smaller discounts when signaling an active stance. Consistent, long-term operating performance of democratic (autarchic) SWF investment targets is positively affected by an active (passive) stance. Despite the negative impact, funds from autarchic countries are more likely to take an active stance.

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1. INTRODUCTION

Sovereign wealth funds (SWFs) are a large and growing class of investors. Estimates of their exact size vary, but, at approximately USD 8 trillion in aggregate assets under management, they dwarf other classes of asset managers such as hedge funds (USD 3.2 trillion) or private equity funds (USD 2.49 trillion). Even more, SWFs are the fastest growing class of institutional investors over the past decade.[1] Due to their sheer size, it is important to understand how they affect the valuation of the firms in which they invest. As institutional shareholders with substantial capital, no explicit liabilities, and long (multi-generational) investment horizons, SWFs have the potential to be the value-enhancing blockholders described by extant research on institutional shareholders (Shleifer and Vishny, 1986). Yet, anecdotal evidence and extant research suggest that SWFs are often under pressure to pursue multiple, often conflicting, objectives (Bortolotti, Fotak, and Megginson, 2015). Accordingly, SWFs might act as channels of political interference, imposing goals on target firms that are, at times, in conflict with shareholder value maximization (Shleifer and Vishny, 1994; Megginson and Netter, 2001; Estrin et al., 2009). Extant literature offers generalized results, yet SWFs originate from very heterogeneous countries, with very different political system. Accordingly, we question whether the impact of SWFs on target valuation depends on the level of democracy of the country in which they are based. We hypothesize that, as politicians in autarchic countries face fewer checks and balances on their behavior (weaker legal institutions, less freedom of the press, lower political competition, fewer veto players), SWFs originating from those countries might be more likely to impose political goals, rather than, say, shareholder value maximization. Further, we investigate whether SWFs, and especially SWFs based in non-democratic countries, can mitigate a potentially negative impact on target valuation by signaling a passive stance insulating investment targets from political interference.

[1] Aggregate data for SWF assets under management and growth rates is from the Sovereign Wealth Fund Institute and Bocconi's Sovereign Investment Lab. Data for hedge funds is from the "2017 Preqin Global Hedge Fund Report"; data for private equity funds is from the "2017 Preqin Global Private Equity and Venture Capital Report."

Bortolotti, Fotak, and Megginson (2015—from here on, "BFM") document a "sovereign wealth fund (SWF) discount": the announcement-period abnormal returns of sovereign wealth fund (SWF) equity investments in publicly traded firms are positive, but lower than those of comparable private investments. Their evidence supports the hypothesis that political interference negatively affects both firm value and performance, suggesting that the discount is due to markets pricing the threat of politicians imposing a non-commercial agenda in their investment targets. We first replicate the findings by BFM using a manually constructed dataset of 900 investments by SWFs (or by SWF-owned investment subsidiaries) in publicly traded firms, over the 1980–2012 period, and a "benchmark" control sample of 5,350 stock purchases by private financial investors. As BFM, we document a statistically and economically significant "SWF discount," wherein SWF stock purchases have a smaller valuation impact on target firms than do comparable stock purchases by private investors. Announcements of SWF investments are associated with a positive mean abnormal return of 0.38%, compared with the 4.45% mean abnormal return generated by the benchmark sample of private investors. Even after matching countries and timeframes, we note that SWF acquisitions differ from those by private financial investors: SWFs tend to target larger and more profitable firms, but they also tend to buy smaller stakes and acquire controlling shares less frequently. Yet, even after controlling for these target and deal differences, the estimated "SWF discount" is statistically and economically significant, with a mean of -1.31%. Conservative estimation translates that into an average discount on firm market capitalization of $60 million for each SWF investment, or an aggregate discount of $54 billion in the sample we study. Given the magnitude of the impact on firm value, it is important to understand whether all SWFs suffer from similar discounts and whether effective mitigating mechanisms exist.

In subsample analysis, we find that the discount, while associated with SWFs originating from both democratic and autarchic countries, is larger for the latter group. While SWFs based in democratic countries (for simplicity, we will call them "democratic SWFs") experience a discount of -1.12%, SWFs from autarchic countries ("autarchic SWFs") experience a discount of -1.57%. In robustness tests, we

classify countries on the basis of the strength of constraints on the governing executive and find consistent results, indicating that the SWF discount is larger in countries with weaker institutional constraints.

Having established the existence of a SWF discount and the link with the strength of democratic institutions in the host country, we hypothesize that SWFs—and, in particular, autarchic SWFs—might be able to mitigate such a discount by insulating fund managers from political interference and by signaling a passive stance. We posit that SWFs might do so in various ways. First, a SWF might adopt a governance structure that insulates managers from political pressures—or, at least, one that enhances independent decision making. To test this hypothesis, we build a variable measuring the proportion of private-sector (non-political) directors on the SWF board, as an inverse proxy for the extent of involvement of politicians in the management of the fund. In robustness tests, we use an index of political interference based on SWF governance score by Truman (2008 and 2011) as an alternative metric of SWF political independence. Second, SWFs might refrain from purchasing large stakes and, especially, might refrain from obtaining control over the investment target. Third, SWFs might not elect representatives to the target's board of directors, even though the stake acquired might be large enough to justify representation. Fourth, SWFs might co-invest with private-sector partners, to signal a commitment to shareholder value maximization. Fifth, SWFs might invest indirectly, via subsidiaries or affiliated companies that are either fully or partially owned by the SWF itself. Sixth, SWFs might invest abroad, as both the incentives and the ability of politicians to affect investment targets are lower for foreign investments.

In a regression framework, we investigate whether the size of the discount differs depending on the type of country of origin of the investing SWF (democratic vs. autarchic) in interaction with these "discount-mitigating" mechanisms. We find, for all funds, a positive association between foreign investments and the market reaction, suggesting that investors are more concerned about political interference in domestic deals. For SWFs originating from democratic countries, we find a statistically and economically significant positive association between the market reaction (compared to private-sector acquirers) and the binary variables identifying large and controlling stakes and direct investments. This suggests that markets react favorably to signals of an active stance by democratic SWFs. For SWFs

originating from autarchic countries we find, instead, a negative association with controlling stakes and direct investments, suggesting that markets value a passive stance by autarchic SWFs.

We further investigate the impact of SWFs on the operating performance of target firms. We first replicate the findings by Bortolotti, Fotak, and Megginson (2015) and document that SWF targets suffer from deteriorating profitability (return on assets) and valuation (market-to-book ratio) over the three years following the investment, compared to targets of private-sector investments. Our novel analysis, in a regression framework, confirms patterns mirroring the short-term market reaction: autarchic SWFs are associated with an increase in ROA when they signal passivity (by purchasing small, indirect stakes), while the opposite is true for democratic SWFs. We further find that firm valuation (measured by market-to-book ratios) increases when democratic SWFs appoint directors to the board of investee firms, while the opposite is true for autarchic SWFs.

Finally, having shown that a passive stance is associated with higher valuation and stronger operating performance for autarchic SWFs, while the opposite is true for democratic SWFs, we question whether SWFs act in a manner consistent with the maximization of target firm valuation. That is, we test whether autarchic SWFs are more likely than democratic SWFs to signal passivity to mitigate the adverse market reaction. We first note that, compared to the benchmark private-sector deals, SWF investments are more likely to be cross-border, involve smaller stakes, and are less likely to involve controlling stakes, suggesting that, overall, SWFs do try to invest with a "hands-off" approach. Yet, when we compare autarchic SWFs to democratic SWFs, we find surprising results. Autarchic SWFs are less likely to be insulated from government interference with a large portion of independent directors and are more likely to invest directly (rather than via subsidiaries) and more likely to invest domestically. We also find some evidence that those funds are more likely to appoint directors and assume control. Finally, we find that autarchic SWFs are more likely to invest in regulated industries, but the result is not statistically significant. Overall, these findings reveal that, despite the negative market reaction, funds from autarchic countries are more likely to take an active stance in their investments. Given the evidence of significant costs of such a stance (in terms of deteriorating investment value), our evidence strongly suggests that

SWFs from autarchic countries could greatly benefit from the adoption of political risk mitigating strategies.

Our research adds to the literature on SWFs. The closest paper, in this sense, are Knill, Lee, and Mauck (2012b), in which the authors documents that SWFs do not positively impact firm value as other institutional investors, and Bortolotti, Fotak, and Megginson (2015), as the authors document that the market reaction to SWF investments is weaker than the reaction to private-sector investments. We extend this line of inquiry with a focus on the "SWF discount" and a novel analysis of mitigating mechanisms.[2] While BFM focus on the determinants of the market reaction, we focus on the drivers of the discount (the difference between the market reaction to SWFs vs private-sector investments) by, first, presenting evidence that the market reaction to SWF investments is conditioned on the level of democracy of the SWF hosting country. Second, we find that SWFs have means to mitigate this discount, but the optimal strategy depends on the level of democracy of the host country. For SWFs hosted in democratic countries, it is optimal to signal an active stance, while the opposite is true for SWFs hosted in autarchic countries.

Our investigation further contributes to explaining inconsistent findings in extant literature. When investigating the long-term impact of SWF investments on firm value, Bortolotti, Fotak, and Megginson (2015) find evidence of deteriorating profitability and lower valuation, while Kotter and Lel (2011) find consistent evidence, but note weak statistical significance. In contrast, Dewenter, Han, and Malatesta (2010) document a value-enhancing effect of SWF ownership due to the provision of enhanced monitoring as active investors. We show that funds from democratic countries have the potential to add value with an active stance (consistent with Dewenter, Han, and Malatesta, 2010), while funds from

[2] Murtinu and Scalera (2016) tangentially touch upon mitigating mechanisms while analyzing the choice of internationalization strategy of SWFs. They find that opaque and politicized funds are more likely to invest via investment vehicles. While their analysis is limited to the use of investment vehicles, we investigate a broader range of potential signals of a passive stance. Further, the focus on their analysis is on the determinants of the use of investment vehicles, while we focus on their effectiveness as a tool to mitigate adverse market reactions.

autarchic countries can mitigate the "SWF discount" by signaling a passive, hands-off approach (consistent with Bortolotti, Fotak, and Megginson, 2015, and Kotter and Lel, 2011).

Our research contributes also to the broader corporate finance literature, by focusing on how "undesirable shareholders" can mitigate the adverse impact on firm valuation that their investments might elicit. While extant literature has focused on value-enhancing institutional shareholders, by documenting that not all institutional ownership is value increasing and that not all institutional investors are good monitors (Chen, Harford, and Li, 2007; Brav et al., 2008; Klein and Zur, 2009; Ferreira and Matos, 2008), it has largely ignored shareholders whose identity has a negative impact on firm value. While our investigation is specific to SWFs, there is abundant anecdotal evidence of adverse reactions to investments by other state-owned entities, or even by private entities based in non-democratic countries. Our evidence carries implications for all "undesirable shareholders," by showing how signaling a passive stance can mitigate adverse market reactions.

The remainder of the manuscript is structured as follows. We develop testable hypotheses in Section 2. We discuss data sources, data collection methodologies, and offer descriptive statistics in Section 3. We discuss our empirical methodology and results in Section 4. We conclude in Section 5.

2. HYPOTHESES AND TESTABLE PREDICTIONS

2.1. Democracy and the SWF discount

Sovereign wealth funds (SWFs) have the capability and incentives to monitor portfolio firm managers and increase firm value by engaging actively in the governance of target companies. While other institutional investors at times play a similar monitoring role (Ferreira and Matos, 2008), the lack of explicit liabilities, the long-term investment horizon, the low need for short-term liquidity, and the capability to acquire large stakes differentiate SWFs from private financial investors, which could be reflected in higher relative valuations of investment targets. In this sense, SWFs could be the monitoring and value-increasing institutional shareholders envisioned by Shleifer and Vishny (1986). In addition, SWFs could offer valuable connections to target firms, either in terms of market access, access to

government contracts, or access to financing by state-owned banks. Finally, Bertoni and Lugo (2014) find that SWF investments provide an implicit guarantee on the debt of target firms, by signaling support for distressed firms. We call this the "Valuable blockholder" hypothesis.

On the other hand, since sponsoring governments may impose noncommercial, political objectives, not fully consistent with the shareholder wealth maximization typically pursued by private firms, target valuation might be negatively affected (Shleifer and Vishny 1994; Megginson and Netter 2001; Estrin et al. 2009). These objectives can be in the best interests of politicians (tunneling of resources for private benefits), of their constituencies (in an attempt to gain votes and support, as in Grogoryan, 2016), or social: for example, developing certain sectors of the economy, acquiring access to technology or natural resources (Knill, Lee, and Mauck, 2012a), further foreign policy and geopolitical agendas (Helleiner, 2009; Cohen, 2009; Drezner, 2009; Kaminski, 2017), or maximizing employment. In either case, conflicting goals have the potential to negatively affect firm value. Consistent with the above, Chhaochharia and Laeven (2009) and Knill et al. (2012a) show that SWF investments are influenced by political (rather than economic) factors. These findings are echoed by many single-country or regional case studies; for example, Norris (2016) and Kaminsky (2017) find that Chinese SWFs are tools of "economic statecraft" aimed at insuring, among other things, access to natural resources. We call this the "political interference" hypothesis.

The SWF discount documented by Bortolotti, Fotak, and Megginson (2015) is consistent with existing theory and empirical evidence suggesting that politicians are "bad owners" of corporations—and, within the above framework, with the political interference hypothesis.[3] Yet, we question whether this discount is specific to some funds, or stronger for certain funds—namely, funds from autarchic countries. SWFs are supposed to be insulated from direct influence from politicians—and virtually all carry

[3] There is, however, no consensus here. Some scholars have reached the opposite conclusion, that SWFs act as pure economic investors (for example, Avendano and Santiso, 2009; Balding, 2008; Loh, 2010; Epstein and Rose, 2009). Megginson and Fotak (2015) offer a more in-depth discussion about extant empirical research on the impact of SWFs.

provisions restricting the ability of politicians to divert funds. We posit that such restrictions are more effective in democratic countries than in autarchic ones.[4] Further, the strength of democratic institutions appears to directly impact the quality of SWF governance and its transparency: Wang and Li (2016) argue that "SWFs, which reside in non-democratic countries and operate in political environments with too few or too many veto players, are most likely to have weak governance rules and remain opaque. In such cases, the SWFs are likely to deviate from private investors and serve home countries' political agendas." Accordingly, we test whether the political interference hypothesis and the consequent drop in firm valuation are specific to funds originating from autarchic countries and countries with weak constraints on the executive.

2.2. Mitigating the discount

Given the extant evidence of a SWF discount, we question whether funds can mitigate this negative impact on firm valuation, either by developing an internal governance structure that insulates the fund itself from political interference, or by signaling a passive stance in the management of its investment targets. Wang and Li (2016) argue that well-defined governance rules "assuage concerns that they serve home countries' political agendas and extract undue benefits from close ties with home governments." We note that there is much concern amongst media, regulators, and managers about the investment purpose of SWFs, which is often compounded by low levels of transparency of the funds (Truman, 2008; Mattoo and Subramanian, 2008). According to Kotter and Lel (2011), "SWF objectives and behavior are not well understood. In particular, the foreign government ownership of these investment funds coupled with the opaqueness surrounding their structure and activities are among the major concerns in host countries including the United States." We posit that SWFs could signal an

[4] We follow extant literature and define political regime type based on whether citizens are able to choose how and by whom they are governed. "Democracy" here implies free and fair elections of the executive and legislative offices, the right of common citizens to vote and compete for public office, and institutional guarantees for the freedom of association and expression such as an independent judiciary and the absence of censorship (Dahl 1971, 1998). On the other side, "autocracy" implies dictatorship or "limited pluralism" at best (Linz 2000).

intention to be passive shareholders and hence reduce the opacity surrounding their true motives and mitigate the discount documented in extant literature. We hypothesize that such signals of passivity would be most valuable for SWFs based in autarchic regimes, as the ex-ante risk of interference is greater for such funds.

2.2.1. SWF governance and independent private-sector directors

Grogoryan (2016) discusses how politicians and ruling elites control the behavior of SWFs via director appointments. Conversely, one way for a fund to insulate itself from political interference is to have a large portion of independent (non-politically affiliated) directors. In addition, extant literature finds that independent directors monitor managers and prevent value-destroying bids (Byrd and Hickman, 1992). Accordingly, the appointment of private-sector directors could serve as a signal to market participants, indicating that politicians are not going to intervene with the management of the fund, or of its investment holdings.

2.2.2. Size of the stake and control

The degree of influence a shareholder fund has on an investment target is related to the voting rights it obtains in the target. Accordingly, a SWF could signal a passive approach by simply purchasing stakes with small voting rights, or by avoiding controlling stakes. In addition, in many jurisdictions around the world, small stakes might avoid reporting requirements, thus decreasing media and regulatory attention to the deal, and further mitigating adverse reactions.

2.2.3. Director appointments

One of the ways in which large blockhoders affect firm behavior is by appointing directors to the board of the investment target (for example, Klein and Zur, 2009 discuss how hedge funds and other activists successfully influence firms in which they acquire stakes by gaining board representation). Accordingly, a SWF could signal a passive approach by not appointing directors.

2.2.7 Co-investments

SWFs might signal a passive approach, or, at least, a non-politicized approach, by co-investing with private parties, whose goal is presumably the maximization of investment value. The presence of

private-sector co-investors could further certify the shareholder-value orientation of the investing syndicate.

2.2.3. Direct investments

Another way for SWFs to signal a passive approach is by investing via subsidiaries (fully or partially) owned by the investing SWF. Murtinu and Scalera (2016) consistently find that opaque and politicized funds are more likely to invest via investment vehicles, presumably to signal a passive investment approach—yet, they offer no evidence of the impact of such strategy, which is our main focus. Presumably, the additional distance between the politicians and the investment target could further insulate the target from political interference.

2.2.5. Foreign investments

Political interference is less likely when the target is foreign, for multiple reasons. First, the incentives to interfere are lower, as politicians are less concerned about, for example, foreign employment levels than domestic ones. Second, the ability to influence a foreign company is lower, as politicians do not have regulatory powers abroad, and certainly weaker channels of indirect influence (such as the threat of selective enforcement or punitive taxation). Finally, foreign deals generally receive more oversight, as they tend to trigger strong attention by the media and, often, additional regulatory oversight, which reduces the threat of tunneling. For all the above reasons, SWFs might mitigate their negative impact on firm valuation by investing abroad.

2.2.6. Regulated industries

García-Canal and Guillén (2008) note that "While regulation has come to affect virtually every sector of the economy, the so-called 'regulated' industries (e.g. telecommunications, electricity, water, oil, gas, and banking) are subject to an unusual degree of intervention and policy risk. In these industries, governments have the ability to dramatically alter the profitability of firms and investment projects." Given the stronger impact of government intervention in regulated industries and the higher risk of political distortions, SWFs might mitigate the threat of political interference by refraining from investing in regulated industries.

3. DATA AND DESCRIPTIVE ANALYSIS

In this section, we describe variables and data sources. A list of all variables, variable definitions, and data sources are presented in Table 1.

3.1. Sovereign wealth fund definition and list

Despite a growing SWF literature, there still is no consensus on exactly what constitutes a "sovereign wealth fund." This study employs the Sovereign Investment Lab's (SIL) selection criteria, presented in Miracky and Bortolotti (2009) and employed by Bortolotti, Fotak, and Megginson (2015), which defines a SWF as (1) an investment fund rather than an operating company, (2) being wholly owned by a sovereign government, but organized separately from the central bank or finance ministry to protect it from excessive political influence, (3) making international and domestic investments in a variety of risky assets, (4) being charged with seeking a commercial return, and (5) a wealth fund rather than a pension fund, meaning that the fund is not financed with contributions from pensioners and does not have a stream of liabilities committed to individual citizens.[5] These criteria yield a sample of thirty-three sovereign wealth funds from twenty-one countries. We find sufficient data for empirical analysis on public equity investments for nineteen of those funds, based in fourteen countries distinct countries. The full list of funds used in empirical analysis is available in Table 2.

3.2. The sovereign wealth fund investment sample

The sample of SWF investments analyzed here originates from the SIL SWF Database. We follow, as closely as feasible, the sample construction methodology used by Bortolotti, Fotak, and Megginson (2015). The data include investments in listed and unlisted equity, commercial real estate, private equity funds, and joint ventures in which a SWF (or one of its majority-owned subsidiaries) is an

[5] We include Norway's Government Pension Fund Global since, despite its name, it is financed through oil revenues rather than through contributions by pensioners and does not have any explicit pension liabilities. Funds headquartered in the United Arab Emirates are defined as SWFs, as the emirates are the true decision-making administrative units.

investor.[6] The data are assembled using information from five databases (Thomson One Banker, Bloomberg, the Thomson Reuters SDC Mergers and Acquisitions database, the Zephyr Mergers and Acquisitions database, and Zawya) integrated with data from fund Web sites and from various news sources.[7] We rely on 13F filings to track investments by Norway's SWF.[8] From this dataset, we select a subset of investments by SWFs (or their majority-owned subsidiaries) in publicly traded firms, as we require firm-level data. We further restrict our analysis to deals announced between January 1980 (the start point of the SIL database) and December 2012 (to allow for three-years of post-acquisition data, so we can investigate the impact of SWF investments on firms' operating performance). Our final sample contains 900 investments by SWFs (or majority-owned subsidiaries) in publicly traded targets, for a total value of $254 billion (in USD adjusted to the year 2000).[9]

[6] We identify over 150 majority-owned (including fully owned) subsidiaries. In this manuscript, any reference to "SWF investments" includes investments by SWFs, by fully owned subsidiaries, and by majority-owned subsidiaries.

[7] Sources include the Lexis-Nexis database and the archives of *Financial Times*, *New York Times*, *Wall Street Journal*, *GulfNews*, the Associated Press, Reuters, and others.

[8] Given its preference for small stakes acquired on open markets and thus often not widely reported, we rely on Form 13F-HR filings by Norges Bank Investment Management to track investments by Norway's GPFG. We take the filing date—the day when GPFG files a Form 13F-HR detailing its shareholdings in a listed firm—as the announcement date for event studies, since this is the date that the stock ownership information is first disclosed. Given our reliance on Form 13F-HR as a data source, this data is specific to investments in U.S. listed firms.

[9] For comparison, Dewenter, Han, and Malatesta (2010) assemble a sample of 996 transactions spanning 1997 to 2008, but those include transactions not classified as new investments (such as transfers between SWF subsidiaries) and transactions that are disaggregated into multiple trades (for example, if a SWF acquires partial stakes in the same target through different subsidiaries, which we count as a single observation). The set of observations used in their empirical analysis is restricted to 227 investments and 45 divestments. Kotter and Lel (2011) study 503 SWF investments over the period 1980 to 2009, of which 417 are employed in empirical analysis. Knill, Lee, and Mauck (2012b) employ a sample of 231 SWF investments. Bortolotti, Fotak, and Megginson (2015) employ a similar sample of 1,018 investments. The major difference, accounting for a lower number of observations in our study, is due to the fact that we consolidate investments by SWF subsidiaries if contemporaneous, treating them as a single observation, and to the fact that we exclude from our sample the Dubai International Financial Center, as improved financial disclosure revealed that it is co-funded by private sources and thus not a SWF by our definition. In contrast, a handful of studies employ larger datasets on SWF shareholdings, rather than transactions. Fernandes (2014), Avendaño (2012), Avendaño and Santiso (2011), and Dyck and Morse (2011) examine samples of SWF shareholdings in as many as 26,000 companies, all for

Table 2 reports summary statistics about investments by individual SWFs. Investment activity varies greatly across funds; average deal size ranges from $16 million for Norway's GPFG to $2.3 billion for China Investment Corporation (CIC). Not surprisingly, SWFs vary in average size of stakes acquired. The strong preference for broad portfolio diversification by Norway's GPFG is reflected in the small stakes acquired (0.34% on average). On the other hand, Gulf funds tend to buy the largest stakes, with the largest average stake being recorded by Dubai's Istithmar World, at 35.89%.

We further collect data on the total number of directors and individual board member affiliations from a target company's first annual report subsequent to the SWF investment. Overall, SWFs seem quite reluctant to take board seats, as they appoint directors in approximately 5% of investments in our sample; this is significantly less frequent than director appointments observed for a comparable sample of private-sector investments (24.69%).[10] Interestingly, we do not find any directors appointed by nine of the nineteen founds in our list (or by their subsidiaries) to the boards of any target companies. The list of funds who do not appoint directors includes the Kuwait Investment Authority, Korea Investment Corporation, or Abu Dhabi's Mubadala, in spite of the large stakes often being acquired by those funds. The SWFs with the highest propensity to acquire seats are Oman's State General Reserve Fund (33% if deals) and UAE's IPIC (25%)—but, even those funds appoint directors in much less than half of their investments.

3.2. Measuring the strength of democratic institutions

To measure the strength of democratic institutions, we use data from the Polity IV Project database. In particular, for each country-year, we compute the average difference between the

holdings as of year-end 2008 or earlier. Lacking information on the investment transaction, these studies are unable to gauge the valuation impact of SWF investments in an event-study framework.

[10] Due to the amount of effort involved in collecting reliable data on director appointments, we collect these data only for a matched sample of private sector investments (not for the entire set of benchmark transactions), resembling SWF investments in terms of both target and deal characteristics, as described in Section 4.

"Autocracy" and "Democracy" scores. A similar metric has been widely used in extant literature, as in Ayyagari, Demirgüç-Kunt, and Maksimovic (2006) and Rodrik and Wacziarg (2005).

We identify funds based in democratic (autarchic) countries; for brevity, we refer to those as "democratic funds" ("autarchic funds"). The funds with the highest democracy indices are those from Australia and Norway, scoring a perfect ten on the Polity index. Other funds with positive scores include South Korea's Korean Investment Corporation (with an index of 8) and Malaysia's Khazanah Nasional Berhard (6). We identify these four funds as being based in "democratic" regimes and the rest as "autarchic"—for brevity, we refer to SWFs based in democratic countries as "democratic SWFs" and to the rest as "autarchic SWFs." In robustness tests, we (1) re-classify Malaysia's fund as autarchic and (2) replicate all analysis excluding investments from Malaysia, but our main findings are unaffected.

Collectively, the group of democratic funds accounts for approximately half of all deals (by count), but Norway's fund heavily dominates the group of democratic funds (Norway accounts for about 90% of democratic deals by count and about 50% by value; in empirical analysis, we isolate Norway's fund to ensure the results attributed to democratic funds are not driven by its investment).

3.3. Measuring sovereign wealth fund political independence

We classify funds according to the degree of political independence enjoyed by their managerial teams. For this purpose, we use a variety of sources (media reports, fund disclosures, and fund websites) to identify directors and collect biographical data. We then classify directors as "politically connected directors" if they have held, in the past, any government role, elected or appointed, and as "private-sector directors" if otherwise. Finally, we compute the proportion of private-sector directors as a ratio of the number of private-sector directors over the total number of directors. We thus construct a variable measuring the proportion of private-sector directors (*SWF independence*) with values ranging from 0 (no private-sector directors) to 1 (all directors are from the private-sector). We use the most recent available data at the time of writing. Unfortunately, historical data is often unavailable, so a time-varying classification is not feasible. Our underlying assumption is that the degree of independence does not

change significantly over time. We are somehow reassured by Truman (2011), as he notes slow evolution in SWF internal governance.

We document great variation in the proportion of independent directors. Norway's GPFG and Australia's Future Fund have the highest proportions of independent directors (at 86%). Six funds have no private-sector directors (those based in China and Qatar, Oman's State General Investment Fund, the two funds from Abu Dhabi, and Dubai's Investment Corporation).[11]

In robustness tests, we also employ a different measure of fund independence, based on scores by Truman (2008 and 2011) and Bagnall and Truman (2011). We discuss the construction of this variable in more detail when addressing robustness tests in Section 4.

3.5. The benchmark sample

We construct a "benchmark sample" to draw a comparison between SWF investments and similar investments by other, non-government-owned financial firms. We obtain this sample by downloading, from the Thomson Reuters SDC Platinum Mergers & Acquisitions Database (SDC), data on all investments with announcement dates between December 1, 1980 and November 1, 2012, with a publicly traded target and with financial acquirers (acquirers having a Standard Industry Classification code between 6000 and 6999). We only keep transactions in which the acquirer originates from one of the 15 countries in which SWF acquirers in our sample are based; similarly, we only keep transactions for which the target firm is headquartered in one of the 54 countries in which SWF investment targets are headquartered. We further exclude transactions classified as leveraged buyouts, recapitalizations, self-tender offers, exchange offers, repurchases, and privatizations. We also exclude all instances of debt

[11] We do not find data on directors for the funds based in Brunei and Libya and for Oman's Investment Fund. Anecdotal evidence indicates that these funds have no independent directors—or, at least, that they level of independence is low—hence, in our main analysis, we assume that the proportion of private-sector directors is zero. We verify that our results are robust to the exclusion of those funds from our sample. In addition, when the funds are managed by an external asset manager, as in the case of Norway's GPFG funds being invested by Norges Bank Investment Management (NBIM), we collect data on the proportion of independent directors on the board of the asset manager, as that is the more relevant decision-making unit.

restructurings (transactions with an acquisition technique labeled as "debt restructuring" or with an acquirer labeled as "creditor").[12] Transactions with the status listed as "rumor," "discontinued rumor," "status unknown," "seeking buyer," or "seeking buyer withdrawn" are also excluded. We further exclude all deals with SWF involvement, either marked as "SWF Involvement Buyside" or "SWF Involvement Sellside," or manually identified as having as a buyer or seller a SWF, a SWF subsidiary, or a SWF investment vehicles. We further exclude all deals in which the immediate or ultimate parent of either the target or the buyer is identified as "government," all transactions for which the target does not have a Datastream code, and all transactions with individuals as acquirers.

The resulting sample contains 5,350 observations with a total deal value of $474 billion (adjusted to the year 2000).

3.6. Other variables

Target-specific variables (*Total assets*, *Return on assets*, *Quick ratio*, *Closely held shares*, *Sales growth*, *Debt to assets*, and *Market to book*, as defined in Table 1) are from the Thomson Reuters Worldscope (Worldscope) database, in U.S. dollars. In the descriptive statistics and matching procedures, we present and employ target metrics as of December 31 of the year prior to the investment. Dollar-denominated metrics are scaled to 2000 U.S. dollars using the Consumer Price Index (All Urban Consumers) from the U.S. Bureau of Labor Statistics.

Daily stock price performance data and local equity index values are obtained from the Thomson Reuters Datastream (Datastream) database. We employ the *Total return index*, in U.S. dollars, to compute daily returns for individual equities and for associated market indices. We collect country-specific data for both acquirer and target nations: *GDP per capita* (defined as the target-country GDP in 2000 USD divided by national population), *GDP growth*, and *Market capitalization to GDP* (defined as the total

[12] These filters are standard in empirical studies using the SDC database. For example, the same filters are used in Ferreira, Massa, and Matos (2010), but there the authors further exclude all minority acquisitions, by Karolyi and Liao (2017), but there the authors further exclude all domestic deals, and by Bortolotti, Fotak, and Megginson (2015).

market capitalization of all publicly listed domestic firms divided by GDP) are from the World Bank. Data on legal origin (as defined by La Porta et al., 1998) is from a dataset made available by Andrei Shleifer.[13] Banking crises are identified using the dataset by Laeven and Valencia (2010, 2012).

3.7. Univariate comparison, sovereign wealth fund and benchmark samples

As we wish to compare the impact of SWF investments on firm value to the impact of private-sector financial investors, it is important to first understand if and how SWF investments differ from private-sector investments. Simple descriptive statistics help in identifying possible systematic preferences in SWF target selection.

Table 3, panel A, reports mean, median, and number of observations for all continuous variables for both the SWF and benchmark samples. This panel also presents *t*-statistics for a test of differences between SWF and benchmark sample means. The mean (median) value of SWF investments, $331.46 million ($13.36 million), is larger than the $116.35 million ($8.60 million) value for benchmark investments. On the other side, the 8.12% mean (0.86% median) stake acquired by SWFs is significantly smaller than the 22.48% mean (11.92% median) stake acquired by benchmark investors. SWFs tend to invest in larger firms: the mean (median) total value of assets of SWF investment targets is $68.5 billion ($3.22 billion), compared with $1.82 billion ($97 million) for the benchmark sample. SWF investment targets also tend to have higher return on assets but lower liquidity and sales growth, and SWFs tend to invest in countries with stronger democracy scores and higher GDP per capita, but lower GDP growth. Finally, SWFs tend to invest in firms with higher proportions of "closely held shares" (the aggregate proportion of inside and institutional ownership).[14]

Panel B of Table 3 reports descriptive statistics for binary variables in both the SWF and benchmark samples, with the related *chi-square* statistic from a test of differences in proportions between the two samples. Out of the 900 (5,350) investments in the SWF (benchmark) sample—and excluding

[13] http://www.economics.harvard.edu/faculty/shleifer/dataset

[14] The variable "closely held shares" from Worldscope contains a small portion of observations with values greater than 100%, or negative values. We censor the distribution at 0% and 100% in our sample.

from the count missing data-point—88.93% (16.50%) involve foreign targets, 4.09% (12.59%) involve acquisition of a controlling stake exceeding 50% of shares outstanding, 46.42% (24.67%) are initial investments in a specific target, 10.44% (13.16%) are capital injections, and 51.44% (3.94%) are initiated during a banking or financial crisis. In addition we note that SWF investments are more frequently in common law countries (77.84% vs. 61.12%) and in regulated industries (48.11% vs. 39.78%), defined as investments in firms whose primary industry is either energy, telecom, utilities, finance, or high-tech.

For brevity, we omit tabulating data on the industrial allocation of SWF investments. We note, however, that SWF investments are heavily focused on the financial industry (29.54% of all investments) and on industrials (18.17%). The benchmark sample reveals similar patterns, with 25.52% of all investments in financials and 19.02% industrials. We also examine, but do not report, the temporal and geographic distributions of investments. Investments in our sample span 1983 to 2012. Both SWF and benchmark samples are biased toward more recent years, with approximately half of these observations being initiated after January 2008. Finally, SWF investments are concentrated in the United States (44.32% of the total), though this largely reflects the impact of investments by Norway's GFPG; excluding these, U.S.-headquartered target firms account for 11.88% of the number of SWF investments. China, Singapore, India, and the United Kingdom are the next most common targets of SWF investments, with the first two of these involving mostly domestic deals.

4. Empirical Analysis

4.1. Event Studies

We examine the valuation impact of SWF investments on target firms, both absolute and relative to comparable private-sector investments, by analyzing the market reaction at investment announcement using event-study methods.[15] We present event-study results in this section.

[15] The use of event studies to gauge the impact of a corporate event on firm value has long been standard in corporate finance literature. For a review of basic event study methodology, we refer interested readers to Lyon, Barber, and Tsai (1999).

Our main proxy for the impact of SWF investments on firm value is the abnormal stock price return at the time of the investment announcement. Cumulative abnormal returns (CARs) are computed by subtracting the market-model expected return from the target firm's stock total return over various intervals on and around the day on which the announcement of the investment occurs (day 0).[16] We compute market-model expected returns by first estimating model parameters using daily returns over the year (250 trading days) ending 20 trading days prior to the announcement date. We present results for the event day (day 0) but also for the three- (-1,+1) and eleven-day (-5,+5) event windows; in our discussion, we emphasize the three-day window (-1,+1) to capture the effect of possible previous-day leakage of information or next-day reaction (common when announcements occur "after hours" or in distant time zones), while avoiding the increased noise of the longer event window.

Results for the full sample of SWF investments are presented in Table 4. We are able to compute three-day abnormal returns for 738 observations out of the total sample (900 observations); observations are excluded from the analysis if return data are missing during the event window or if there are fewer than twenty non-missing daily data points during the estimation period. The mean (median) three-day CAR is 0.38% (0.02%). In contrast, for the benchmark sample, three-day mean and median CARs are, respectively, 4.45% and 0.83%. The difference in three-day mean abnormal CARs between the SWF and benchmark samples is of -4.08%, indicating a much weaker reaction to SWF investment. A two-sample *t*-test reveals that the difference in means is highly statistically significant.

For robustness, we replicate, but do not report, the same analysis by computing raw (unadjusted, rather than abnormal) returns, market-adjusted abnormal returns, and buy-and-hold (rather than cumulative) abnormal returns. The main results are similar, with both sub-samples displaying positive and statistically significant abnormal returns, but smaller for the SWF sample than for the benchmark sample.

4.2. The sovereign wealth fund discount

[16] Total returns for securities and local market indices are from Datastream and are adjusted for dividends and splits. Returns are computed in U.S. dollars, for both individual securities and local-market indices; unreported robustness tests verify that results are unaffected by this conversion.

Event-study results suggest that the value impact of SWF investors, while positive, is smaller than that of private sector investors. Yet descriptive statistics (presented in Table 2) also reveal that SWF acquisitions differ significantly from those by private financial investors: SWFs tend to target larger and more profitable firms than do private-sector investors, but they also tend to acquire smaller stakes and assume control less frequently. These differences could affect the market reaction, creating potential problems in attributing causation. To test the valuation impact of SWFs, while accounting for possible differences in sample composition, we apply a methodology similar to Bortolotti, Fotak, and Megginson (2015), but with a focus on the SWF discount, rather than on decomposing the abnormal return into target and deal characteristics. We first identify a matched sample of private-sector investments sharing similar target and deal characteristics. We then compute the difference in market reaction between SWF investments and the matched sample. We call this difference a "SWF discount." As in the event study analysis, our proxy for the value impact of investments is the three-day cumulative abnormal return surrounding an investment announcement.

We identify matched investments by relying on propensity score matching: we first determine how SWF investments differ from private-sector investments on the basis of observable target and deal characteristics and then pick, for a reduced benchmark sample, private sector investments that most resemble investments by SWFs.[17] Accordingly, to model the SWF target selection process, we estimate coefficients of a probit model. The response is a binary variable equal to one when the investor is a SWF and to zero when the investor is a non-government-owned financial entity. The set of predictors includes firm, country, and deal characteristics. In selecting the exact metrics to use, we replicate, as much as data availability constraints allow, the approach by Kotter and Lel (2011) and Bortolotti, Fotak, and

[17] Propensity score matching is not new in the empirical corporate finance literature. For example, Campello, Graham, and Harvey (2010) use the technique to investigate the impact of financial constraints on firms: for each "constrained" firm in their sample, they identify a nonconstrained firm matched on size, ownership, ratings, and industry. Fernandes (2014) applies the methodology in a study of the long-term impact of SWF investments on the operating performance of investment targets (but, while we aim at identifying matched transactions, Fernardes identifies matched firms).

Megginson (2015). We include variables measuring deal characteristic in the probit model (*Stake*, *Control*, *Capital injection*, *First investment*, and *Control*) and industry and year fixed effects. Standard errors are clustered at the investment-target level. To mitigate the impact of outliers, all continuous variables are winsorized at the 1st and 99th percentiles of the distribution. Estimation results are included in Appendix Table A1 and suggest that SWFs are more likely to target large firms with recent positive abnormal stock price performance, based in foreign, common-law countries. Further, SWF acquisitions are relatively more likely during a banking or financial crisis. Deals with SWF acquirers are more likely to be capital injections, less likely to be follow-on investments, more likely to involve a transfer of control, but involve otherwise smaller stakes.

Based on estimated coefficients, we compute a probability score, reflecting the likelihood of the acquirer being a SWF. Finally, we select, with replacement, the private sector investment matched to each SWF investment with the closest probability score.[18] To estimate the discount component attributable to the SWF identity, we compute the mean difference between abnormal returns on the SWF investment sample and this matched sample. As reported in Table 5, the average three-day cumulative abnormal return at the announcement of a SWF investment is 0.50%, while, for the matched private-sector sample, it is 1.81%. The estimated target discount is equal to -1.31%, which is both economically and statistically significant (at 1%).

Our main interest lies in the distinction between democratic and autarchic funds, and in how those funds can mitigate this discount. Accordingly, we partition the sample based on whether SWFs are based in a democratic country (Norway, Australia, South Korea, or Malaysia), or otherwise. We then replicate the analysis described above for the two data subsets. We find a statistically significant SWF discount in

[18] We verify that the matched transactions are indeed similar to SWF investments by testing for differences in average propensity scores and we find no statistically significant difference in propensity scores between the two samples. Roberts and Whited (2012) recommend propensity score matching with replacement.

both subsamples. In line with the political interference hypothesis, the discount appears almost 40% larger for autarchic funds (-1.57%) than for democratic ones (-1.12%).

4.3. Mitigating the discount, regression analysis

We turn our attention to whether SWFs can mitigate the discount in market reaction by signaling a passive stance. We investigate the determinants of the discount by estimating the following investment-level OLS regression:

$$Y_{i,l,j,t} = \alpha_1 + \alpha_2 X_{i,l,j,t} + \eta_t + \delta_j + \varepsilon_i \quad (1)$$

The dependent variable $Y_{i,l,j,t}$ is the discount for investment *i*, by the SWF *l*, in country *j*, during year *t*, computed as the difference between the three-day CAR at SWF investment announcement and the three-day CAR at announcement of the propensity-score matched investment, as described in Section 4.2. The first model we estimate aims at identifying the effectiveness of "passivity signals" for all funds—we accordingly add the vector $X_{i,l,j,t}$ is the set of explanatory variables identifying whether the SWF has taken seats on the board of the target (*Director*), assumed a controlling stake (*Control*), measuring the size of the stake acquired (*Stake*), identifying cross-border deals (*Foreign*), direct investments (*Direct investment*), deals without partners (*Unique acquirer*), and deals with targets in regulated industries (*Regulated industry*). The terms δ_j and η_t represent country and year fixed effects, respectively. ε_i is the error term—in estimation, standard errors are clustered at the SWF level.

Estimation results are presented in the first column of Table 6. The coefficient associated with the intercept is negative and statistically significant (at the 10% level), confirming the existence of a sizable discount. The coefficient associated with the binary variable identifying foreign deals is positive and statistically significant (at the 10% level), indicating that the discount is smaller for cross-border investments, consistent with the political interference hypothesis. On the other side, we find that the discount is smaller also for "unique acquirer" deals, contrary to our expectations—and the other "passivity signals" do not seem to reduce the discount.

Overall, this analysis does not yield strong evidence of effectiveness of passivity signals in mitigating the discount. Yet, our previous analysis has indicated that the discount is larger for autarchic

funds. We conjecture that passivity signals could have a stronger impact when acquisitions are by autarchic funds. We accordingly attempt to investigate whether these mechanisms are equally effective for democratic and autarchic SWFs. We add to the model binary variables identifying autarchic SWFs and we interact this variable with the set variables identifying the passivity signals listed above. In addition, Norway's GPFG is often cited as being different from other SWFs, both in terms of internal organization and investment style—and accounts for a large number of democratic SWF deals.[19] Consistently, we add a binary variable identifying investments by Norway's fund, an index of SWF independence (as previously discussed, the proportion of private-sector directors on the fund's board), and interaction terms between the index of SWF independence and the variable identifying autarchic SWFs. Our findings, presented in the second column of Table 6, paint a nuanced picture. First, the intercept, while negative (indicating a 9% discount), is no longer statistically significant. For democratic funds, we find that the market reaction, relative to private-sector investors, is positively related to the size of the stake acquired, to the acquisition of a majority stake, to foreign deals, and direct investments. The economic magnitude of the results is significant: for example, a controlling stake by a democratic SWF increases the market reaction by 6%; a direct investment by an additional 11%. Conversely, the interaction with autarchic funds reveals that controlling stakes and direct investments are associated with large discounts: a direct investment by an autarchic fund will increase the discount by about 5% (the sum of the coefficient estimates on *Direct* and *SWF autarchic* × *Direct*); a controlling stake by an autarchic fund will increase the discount by about 22%. Overall, these results suggests that democratic SWFs are rewarded by an active approach (large, controlling stakes and direct acquisitions), especially abroad. This

[19] Norway's GPFG is often described as being the most professionally managed and most transparent SWF. Various studies have focused on its structure and behavior (Caner and Grennes 2009; Ang, Goetzmann, and Schaefer 2009; Chambers, Dimson, and Ilmanen 2012), finding that its management, while reporting periodically to the government, is better insulated from political interference than any other SWF leadership team. In terms of investment style, GPFG makes exclusively foreign investments and has committed to acquiring small stakes—although the exact definition of "small" has varied over time. Our approach, isolating investments by GPFG, mirrors Dewenter, Han, and Malatesta (2010) and Bortolotti Fotak, and Megginson (2015).

suggests that markets view democratic SWFs as potentially value-enhancing blockholders. Conversely, controlling and direct stakes, signals of active investments, lead to larger negative reactions (a larger "SWF discount") for autarchic funds, suggesting that the threat of political interference dominates. In all tests, the degree of political independence of the SWF does not appear to be related to the magnitude of the SWF discount, suggesting that the presence of private-sector directors is not a credible signal of political non-interference.

4.4. Robustness test: Alternative metric of political independence

The results presented in Section 4.3 indicate that political independence does not affect the impact of SWFs on target valuation. Given the difficulty in measuring political independence, the lack of results might be due to noise in our dependent variable. Accordingly, we construct a different metric, previously employed in Bortolotti, Fotak, and Megginson (2015). We add the scores to Truman's (2008) question nine ("Is the role of the government in setting the investment strategy of the SWF clearly established"), question ten ("Is the role of the managers in executing the investment strategy clearly established?"), and question eleven ("Are decisions on specific investments made by the managers?"). We compute the final index as three minus the sum of the scores described above, so our political index ranges from zero to three, in quarter point increments, with higher values indicating higher degrees of political interference. We classify four funds not included in Truman (2008) as having the highest value on the political index. In unreported robustness tests, we re-estimate the model by omitting investments by those four funds and by assigning them the lowest value on the political independence index. In all cases, results are robust.

Not surprisingly, we find lower scores for political interference in SWFs originating from advanced OECD countries, such as Norway, Australia, and Korea. An effective shield against political interference is also in place at the Kuwait Investment Authority and the Singaporean funds. One limitation of our classification scheme is that the scores are time-invariant, as they are recorded at a single point in time, the year 2008. Accordingly, our analysis allows for cross-sectional comparison, but no time-series variation within each SWF's investment portfolio. We note, however, that extant studies

(Truman 2011; Bagnall and Truman 2011) find little variation in Truman's scores across time, justifying that the use of a time-invariant metric.[20]

Results are reported in the third column of Table 6. The negative and statistically significant intercept indicates the existence of a large discount, on average. The newly introduced variable measuring political interference (*SWF political index*) is not statistically significant. Once more, we find that, for democratic funds, the market reaction is positively related to "active" deal characteristics: large and controlling stakes and direct investments with no partners. The market reaction is stronger for foreign deals. But the market reaction is negatively related to direct investments and controlling stakes for autarchic funds—and the "foreign deal premium" is much smaller for autarchic than for democratic funds. Overall, this set of robustness tests largely confirms our previous findings.

4.5. Robustness test: constraints on the executive

We have hypothesized that SWFs from democratic countries might be under a greater threat of political interference. Wang and Li (2016) argue that "SWF institutionalization is structurally rooted in a country's regime type and the number of veto players in public policymaking. Democracy promotes SWF institutionalization by its need for strong rule of law, voters trying to constrain opportunistic behaviors of politicians, and the free flow of information." In democratic regimes, lower constraints on the executive allow for greater political interference. The Polity IV database, from which we obtain the metrics of "democracy vs. autarchy" employed in the analysis so far presented, includes also a score for the level of "constraints on the ruling executive"—mirroring Wang and Li's "number of veto players."[21]

[20] Bagnall and Truman (2011) document a slight improvement in question nine (between the 2008 and 2011 datasets), but they warn of the improvement being possibly due to self-reporting bias.

[21] The variable is described as follows: "Operationally, this variable refers to the extent of institutionalized constraints on the decision making powers of chief executives, whether individuals or collectivities. Such limitations may be imposed by any 'accountability groups.' In Western democracies these are usually legislatures. Other kinds of accountability groups are the ruling party in a one-party state; councils of nobles or powerful advisors in monarchies; the military in coup-prone polities; and in many states a strong, independent judiciary. The concern is therefore with the checks and balances between the various parts of the decision-making process. A seven-category scale is used." From http://www.systemicpeace.org/inscr/p4manualv2015.pdf

In unreported robustness tests, we replace the "SWF democracy" variable with a binary variable identifying high levels of executive constraints (with "high" being above the median). Our core findings are unaffected. For funds from countries with low levels of executive constraints, small stakes and indirect investments mitigate the magnitude of the SWF discount. For funds from countries with high levels of executive constraints, large and controlling stakes, direct investments, and investments without partners are related to stronger market reactions.

We should note, however, the high level of correlation between measures of democracy and executive constraints. We are, ultimately, unable to properly distinguish between the impact of executive constraints and other features of democratic regimes (such as degree of political competition, transparency of the electoral process, strength of the legal system, freedom of the press, etc.).

Additionally, Wang and Li (2016) argue that the number of veto players has a non-linear impact on the quality of SWF governance: "When the number of veto players is very small, institutionalization is too rigid, constraining, and not preferred; when the number of veto players is moderate, it is optimal for veto players to manage their conflict over SWF governance in a more routine and institutionalized fashion; and when the number of veto players grows above a threshold, it becomes too costly to coordinate and produce mutually agreeable institutional rules." Accordingly, we explore non-linear effects by adding, in an additional model, the Polity value for "constraints on the ruling executive," the square of the latter variable, and their interactions with the usual signals of passivity. In untabulated results, we find no support for the hypothesized non-linear impact of executive constraints on market reactions.

4.6. Operating performance

The evidence based on market reactions could be rational, and anticipate, in an efficient-market framework, the long-term impact of a SWF acquirer on firm valuation. On the other side, foreign acquirers, especially opaque state-affiliated funds originating from non-democratic regimes, could elicit irrational fears and trigger a protectionist or xenophobic reaction. Accordingly, we question whether the results we find in terms of market reaction are consistent with the long-term impact of SWFs on firm's

profitability and valuation, or whether they reveal some irrational bias against SWFs or other government-owned acquirers.

We investigate the impact of SWFs on firm's profitability (proxied by its return on assets, or *ROA*) and valuation (market-to-book ratio). For each variable, we compute changes over the one, two, and three years following investment by the SWF. For example, in estimating the change in *ROA* over the year following the SWF investment (say, for example, an investment that occurs during the year 2010), we compute the difference between *ROA* as of the end of the calendar year following the investment (December 31, 2011) and the end of the year preceding the SWF investment (December 31, 2009). We proceed similarly over the two and three-year horizons and for all other variables. As in previous analyses, to mitigate the impact of outliers, all continuous variables are winsorized at the 1st and 99th percentiles of the distribution. We test the significance of these changes using *t*-tests with standard errors clustered at the target firm level. We also compute changes in operating performance variables for the benchmark sample. Finally, we compare the SWF and benchmark sample results by subtracting changes in the variable of interest for the benchmark sample from changes for the SWF sample. We present our findings in Table 7. The exact sample size used in each test is indicated in the table, but, in general, the number of available observations shrinks over the longer time horizons (for SWFs, sample sizes in this table range from 682 to 565). Survivorship biases raise questions about the interpretation of long-horizon analysis, yet, as long as survivorship biases affect our SWF and matched samples in a similar fashion, the analysis should lead to valid inference. In untabulated tests, we find no statistically significant difference between the rate of delisting of SWF investment targets vs. private-sector investment targets, over the one-, two-, and three-year windows following investments.

As reported in Table 7, we find that SWF targets experience a decline in profitability over all time horizons: *Return on assets* declines by 1.92 percentage points over one year, 0.96 over two, and 1.59 over three. In contrast, we observe an increase in *ROA* in the matched sample, statistically significant over all horizons, equal to 1.85 percentage points at the three-year mark. The difference between sample means is statistically significant at all horizons and equal to approximately 3.44 percentage points at the three-year

horizon. Kotter and Lel (2011) likewise observe a decline in *Return on assets* for SWF targets, yet they find a similar decline in in a sample of firms matched by country, industry, and profitability—which emphasizes how proper benchmarking (our benchmark sample includes not all firms, but firms that are targets of private-sector deals) affects the inference from these tests.

Similarly, we find the *Market to book* ratio showing a statistically significant decline over all time horizons. We observe no decline in *Market to book* for the benchmark sample. The difference-in-differences is negative and statistically significant over all horizons, indicating that valuation of SWF investment targets suffers over the three years following SWF investments.

We question whether there are differences in performance between targets of democratic and autarchic funds. Even more, we are interested in testing whether the passivity signals by autarchic funds—or the active-stance signals sent by democratic funds—are associated with stronger operating performance, as the short-term market reaction would suggest. We employ regression analysis. In results presented in column 1 of Table 8, the response variable is the difference in percentage change in *ROA*. We first compute the change in *ROA* between the end of the year following SWF investment and the end of the year preceding the SWF investment, scaled by the *ROA* at the end of the year preceding SWF investment. We do the same for the matched private-sector investment. Finally, we compute the difference between the SWF and private-sector investment. The list of explanatory variables mirrors those included in Table 6. We find results highly consistent with the regression explaining the magnitude of the SWF discount. For democratic funds, large stakes and direct investments are associated with an increase in *ROA*. Cross-border deals are also associated with stronger *ROA*. On the other side, for autarchic funds, we find that the size of the stake and direct investments are associated with negative interactions. We note one puzzling findings: independent SWFs (those with a large portion of non-political directors) are associated with a decline in *ROA*, contrary to our expectations. Statistical significant is, however, weak.

We replicate similar analysis on the change in market-to-book ratio. We find that, for democratic funds, electing directors to the board leads to higher valuation ratios, while the opposite is true for

autarchic funds. In addition, we find valuation to be negatively related to direct investments and to investments in regulated industries.

The findings in our analysis of operating performance reveal weaker statistical significance (perhaps due to a smaller sample, due to data availability issues) than the analysis of abnormal returns at announcement. Yet, overall, they paint a consistent picture. The weaker short-term market reaction we note is consistent with a relative deterioration in operating performance. Even more, an active stance (large stakes and direct investments) is associated with higher profitability when funds are democratic, but the opposite is true for autarchic funds. Similarly, an active approach (electing directors) is associated with higher valuations for democratic funds, but lower valuation for autarchic funds.

The results presented in this section deal with a short time horizon, up to year t+1, where year t is the year during which the SWF (matched) investment takes place. In untabulated analysis, we obtain similar results over longer time horizons, but, while coefficient estimates are similar in magnitude, statistical significance is weaker, likely due to the sample size shrinking at longer horizons.

4.7. Do sovereign wealth funds signal a passive stance?

Having shown that a passive stance is associate with higher valuation and stronger operating performance for autarchic countries, while the opposite is true for democratic SWFs, we question whether SWFs attempt to strategically signal an active or passive stance to influence the market reaction and their impact on target valuation. We first note that, as reported in Table 2, compared to the benchmark private-sector deals, SWF investments are more likely to be foreign, involve smaller stakes, and are less likely to involve control. Yet, when we compare autarchic SWFs to democratic SWFs, we find surprising results. Funds from autarchic countries are less likely to be insulated from government interference: the proportion of non-political directors is 83.07% for democratic funds, but only 38.32% for autarchic funds. Autarchic funds are more likely to elect representatives on the board of directors of the target (7.61% of the deals, vs. 1.88% for democratic funds), more likely to acquire controlling stakes (7.61% vs. 0.97%), and more likely to acquire large stakes (the average stake is 15.32% for autarchic funds and 1.59% for democratic ones). They are also less likely to invest abroad (83.69% of deals vs. 94.79%), more likely to

invest directly rather than via subsidiaries (61.10% vs. 5.65%), and more likely to invest in regulated industries (49.26% vs. 46.82%). The only signal of a lower propensity for active investing comes from the statistics on deals with no partners: 96.19% of deals by autarchic funds are "unique acquirer" deals, while 99.76% of deals of democratic funds are. Yet, the difference does not appear economically meaningful.

Overall, these findings reveal that, despite the negative market reaction, funds from autarchic countries are more likely to take an active stance in their investments. Given the costs of such a stance (in terms of deteriorating investment value), our evidence strongly suggests that these funds value the ability to influence investment targets.

We further analyze the fund's voluntary statements in regards to activism and political interference, either included in annual reports, mission statements, websites, or conveyed by fund managers during media interviews. Nine of the nineteen funds we track commit verbally or in writing to an active approach (funds from Malaysia, China, Qatar, Australia, New Zealand, Korea, the Investment Corporation of Dubai and the two funds from Singapore). Interestingly, this list includes all of the funds we classify as "democratic." Only two funds commit to a passive approach and both are based in autarchic Middle-Eastern regimes (Abu Dhabi and Kuwait). Two SWFs appear to be ambiguous, if not ambivalent, about their own stance. For example, in its 2016 annual report, Temasek's management first promises engagement ("As an engaged shareholder, we promote sound corporate governance in our portfolio companies"), just to contradict itself by committing to a passive stance a couple of sentences later ("Our portfolio companies are guided and managed by their respective boards and management; we do not direct their business decisions or operations").[22] Notably, the report continues by emphasizing the independence of the fund from political interference ("our investment, divestment and other business decisions are directed by our Board and management. Neither the President of Singapore nor our

[22] http://www.temasek.com.sg/documents/download/downloads/20160706235822/TR2016_Singles.pdf

shareholder, the Singapore Government, is involved in our business decisions"). We find similar, conflicting statements by the Investment Corporation of Dubai.

Five of the funds include statements stressing the independence of managers from political interference (those based in Australia, Qatar, Kuwait, Norway, and Singapore's Temasek), although virtually all SWFs have, at some point or another, issued statements to the press stressing their independence and non-political nature.

5. CONCLUSIONS

Extant research finds that the announcement-period abnormal returns of sovereign wealth fund (SWF) equity investments in publicly traded firms are positive, but lower than those of comparable private investments. We question whether this discount is specific to certain funds and whether it is larger for SWFs originating from less-democratic countries, as those funds are more likely to become vehicles of political pressures. Further, we investigate whether SWFs can mitigate such a discount by signaling a passive stance and thereby insulating investment targets from political interference.

We first document strong, robust evidence of a statistically and economically significant "SWF discount." We further find that this discount is larger for SWFs based in autarchic, rather than democratic, countries.

We further hypothesize that SWFs—and, in particular, autarchic SWFs—might be able to mitigate such discount by insulating the funds from political interference and by signaling a passive stance. Our evidence indicates that markets react favorably to signals of an active stance (large stakes and controlling stakes) by democratic SWFs. For autarchic SWFs we find, instead, a negative association with controlling stakes and direct investments, suggesting that markets value a passive stance by SWFs originating from autarchic countries.

We further inspect the impact of SWFs on the operating performance of target firms. In a regression framework, we confirm patterns mirroring the short-term market reaction: funds from

autarchic countries are associated with stronger performance and greater valuation when they signal passivity, while the opposite is true for funds from democratic countries.

Finally, having shown that a passive stance is associate with higher valuation and stronger operating performance for autarchic countries, we test whether autarchic SWFs are more likely to signal passivity, but find that, despite the negative market reaction, funds from autarchic countries are more likely to take an active stance in their investments. Given the direct and evident costs of such a stance, our evidence suggests that these funds value the ability to influence investment targets.

Our research adds to the literature on SWFs. We show that the optimal strategy is for democratic funds to signal an active stance, while, for autarchic funds, to signal a passive approach. This distinction contributes to reconcile conflicting findings in extant literature and points to the fact that apparent inconsistencies are largely due to grouping very heterogeneous funds under the "SWF" label.

Yet, our findings have broader implications for foreign investors, both government-owned ones and private-sector ones. The adverse reaction we document is likely most severe for government-owned investors; yet, it would be interesting to investigate whether private-sector investors originating from autarchic countries suffer from similar adverse market reactions, and how those adverse reactions can be mitigated. Finally, we show that the political system of the SWF host country matters—but we fall short of identifying which elements of the political system truly matter. Robustness tests suggest that the number of veto players and constraints on the ruling executive are key determinants, but we cannot rule out other features of democratic regimes (free press, competitive elections, etc.) as being key drivers of the market reaction to SWF investments.

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Table 1. Variable definitions

Table 1 lists names, sources, and definitions of the variables used in descriptive and empirical analysis.

Variable	Source	Definition
Deal value	SIL SWF Database/SDC	Total value of the equity investment, in 2000 USD (adjusted using CPI)
Stake	SIL SWF Database/SDC	Proportion of the investment target equity acquired in the deal by the SWF
Control	SIL SWF Database/SDC	Binary variable, equal to one if the staek acquired exceeds 50%
Acquirer country democracy index/Target country democracy index	Polity IV Project	'Democracy' minus 'Autarchy' score for the relevant country
Target country common	La Porta et al. (1998)	Binary variable, equal to one if the relevant country is of common law origin
Crisis	Laeven and Valencia (2010) and related website	Binary variable, equal to one if the country of the target headquarters is undergoing a banking crisis in the year of the investment
Target country GDP per capita	World Bank	GDP Per Capita for the country in which the target's headquarters are located, in 2000 USD (adjusted using CPI)
Target country GDP growth	World Bank	Year-to-Year Change in GDP Per Capita for the country in which the target's headquarters are located, in 2000 USD (adjusted using CPI)
Target country market cap to GDP	World Bank	The sum of share price times the number of shares outstanding of all listed domestic companies (excluding investment companies, mutual funds, or other collective investment vehicles) divided by the total GDP, for the country in which the target's headquarters are located
Total assets (TA)	Worldscope, WC02999	Total assets, adjusted to the base year 2000 by using the USA CPI
Return on assets (ROA)	Worldscope, WC08326	The exact definition varies by industry; please refer to the Worldscope Database Datatype Definitions Guide, available at www.thomson.com/financial
Quick ratio (QR)	Worldscope, WC08101	Cash and Equivalents plus net receivables, divided by total current liabilities
Closely held shares (CHS)	Worldscope, WC08021	The number of closely held shares divided by common shares outstanding. 'Closely Held Shares' represents shares held by insiders, other corporations, pension and benefit plans, and any individual holdings more than 5% of shares outstanding
Sales growth (SG)	Worldscope, WC08698	Net Sales' or 'Revenue' divided by the previous year's 'Net Sales' or 'Revenue'
Debt to assets (DtoA)	Worldscope, WC08236	'Total Debt' divided by 'Total Assets'
Market to book (MtoB)	Worldscope, WC09704	Market capitalization of the firm divided by common equity
Foreign	SIL SWF Database/SDC	Binary variable, set equal to one if the acquirer country and target country are not the same

Table 1. Variable definitions--Continued

Variable	Source	Definition
SWF	SIL SWF Database	Binary variable, set equal to one if the acquirer is a SWF (or a majority-owned SWF subsidiary)
SWF Norway	SIL SWF Database	Binary variable, set equal to one if the acquiring SWF is (is not) the Norwegian Government Pension Fund Global
SWF autarchic	Polity IV Project	Binary variable, set equal to one if the SWF is based in a non-democratic country
SWF independence	SWF websites, annual reports, other sources	Variable, ranging from zero to one, set equal to the proportion of non-political directors on a SWF board
SWF political index	SIL SWF Database; Truman (2008)	Degree of political interference in the management of a SWF, based on questions 9, 10, and 11 in Truman (2008). Higher values indicate higher levels of political interference.
First investment	SIL SWF Database	Binary variable, set equal to one if "Stake acquired" is equal to "Stake owned"
Capital injection	SIL SWF Database	Binary variable, set equalt to one if the investment is a capital raising event for the target
Director	SIL SWF Database, SWF and target annual reports	Binary variable, set equal to one if the investor appoints at least one director to the board of directors
Direct investment		Binary variable, set equal to one if the investment is direct (not via subsidiaries or investment vehicles)
Unique acquirer		Binary variable, set equal to one if the acquirer is investing "alone" (without partners and not as part of an investing syndicate)
Return	Datastream, RI	Daily percentage change in the total return index (RI), in USD
Local-index return	Datastream, LI	Daily percentage change in the total return index for the local market index identified by Datastream (LI), in USD
Regulated industry	Based on Worldscope primary FTA code	Binary variable, set equal to one if the investment is in a firm with primary FTA code being either energy (FTA<1000), telectom (6000<FTA<7000), utilities (7000<FTA<8000), finance (8000<FTA<9000) or technology (9000<FTA<10000)

Table 2. List of sovereign wealth funds

This table lists the nineteen funds that meet the Sovereign Investment Laboratory (SIL) definition of a SWF and for which we have available transaction data. For each fund, the table includes the country of origin, the fund's name, the number of investments, the total value and average value of investments, the average target firm stake acquired, the proportion of that fund's deals for which the SWF obtains a board seat, the total number of directors on the fund's board, the number and proportion of private-sector directors on the fund's board, the democracy index (from Polity IV data), and whether the fund was classified as being based in a democratic country. Variable definitions are in Table 1.

Country	Fund name	Obs	Total deal value USD Mn	Average deal value USD Mn	Average deal stake	Deals with board seats %	Total directors	Private sector directors	Private sector directors %	Democracy index	Democratic
Australia	Australian Future Fund	2	$173.72	$86.86	1.74%	0.00%	7	6	86%	10	Y
Bahrain	Mumtalakat Holding Company	1	$199.23	$199.23	6.67%	0.00%	11	4	36%	-10	N
Brunei	Brunei Investment Agency	3	$234.77	$117.38	25.20%	0.00%	na	na	na	na	N
China	China Investment Corporation	38	$71,739.01	$2,314.16	12.25%	10.53%	9	0	0%	-7	N
Kuwait	Kuwait Investment Authority	20	$5,676.38	$436.64	6.44%	0.00%	9	4	44%	-7	N
Libya	Libyan Investment Authority	20	$1,368.55	$124.41	14.96%	15.00%	na	na	na	0	N
Malaysia	Khazanah Nasional Berhard	30	$4,951.46	$206.31	19.44%	26.67%	11	5	45%	6	Y
Norway	Government Pension Fund – Global	391	$6,338.83	$16.42	0.34%	0.00%	7	6	86%	10	Y
Oman	State General Reserve Fund	2	$176.70	$88.35	17.15%	0.00%	6	0	0%	-8	N
Oman	Oman Investment Fund	6	$982.14	$245.54	10.63%	33.33%	na	na	na	-8	N

Table 2. List of sovereign wealth funds - Continued

Country	Fund name	Obs	Total deal value USD Mn	Average deal value USD Mn	Average deal stake	Deals with board seats %	Total directors	Private sector directors	Private sector directors %	Democracy index	Democratic
Qatar	Qatar Investment Authority	47	$56,063.76	$1,868.79	12.55%	12.77%	5	0	0%	-10	N
Republic of Korea	Korea Investment Corporation	2	$135.86	$135.86	na	0.00%	9	7	78%	8	Y
Singapore	Government of Singapore Investment Corporation	92	$19,064.77	$261.16	7.16%	3.26%	15	6	40%	-2	N
Singapore	Temasek Holdings	167	$44,838.55	$353.06	20.43%	5.99%	13	10	77%	-2	N
UAE - Abu Dhabi	Abu Dhabi Investment Authority	25	$11,523.48	$606.50	8.89%	4.00%	9	0	0%	-8	N
UAE - Abu Dhabi	International Petroleum Investment Company	24	$19,475.60	$1,081.98	21.51%	25.00%	7	0	0%	-8	N
UAE - Dubai	Investment Corporation of Dubai	1	$1,245.90	$1,245.90	na	0.00%	5	0	0%	-8	N
UAE - Dubai	Istithmar World	14	$4,051.77	$368.34	35.89%	7.14%	6	2	33%	-8	N
UAE-Abu Dhabi	Mubadala Development Company PJSC	15	$5,658.77	$565.88	33.84%	0.00%	7	1	14%	-8	N
Total		900	$253,899.26								

Table 3. Characteristics of the sample of SWF investments and the benchmark sample of investments in publicly traded firms

This table includes descriptive statistics for the sample of SWF investments and the related benchmark sample of investments by private-sector financial institutions from the same countries. Panel A contains mean, median, and number of observations for each of the continuous variables for both samples, and results from a *t*-test for differences in means. Panel B contains the proportion (out of the total number of nonmissing observations), number of observations, and count of the instances in which a binary variable assumes the value of one and the results from a chi-square test for differences in proportions. Variables are defined in Table 1. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

Panel A: Continuous variables

	SWF sample			Benchmark sample			Difference in means		
Variable	Mean	Median	N	Mean	Median	N		*t*	
Deal value (USD M)	$331.46	$13.36	766	$116.35	$8.60	4074	$215.11	3.92	***
Deal stake	8.12%	0.86%	783	22.48%	11.92%	3883	-14.36%	-17.89	***
Stake owned	12.12%	0.51%	628	29.18%	15.60%	3966	-17.06%	-11.22	***
Democracy index, acquirer country	6.68	10	865	4.81	8	4982	1.87	6.03	***
Democracy index, target country	2.01	-2	897	3.36	6	4351	-1.36	-3.38	***
Target country GDP per capita (USD)	$31,993	$40,507	884	$20,210	$21,795	5350	$11,782	13.10	***
Target country GDP growth	1.01%	0.47%	872	3.45%	2.87%	4981	-2.44%	-12.66	***
Target country market cap to GDP	104.01%	82.55%	883	108.42%	95.91%	5350	-4.41%	-1.36	
Total assets (USD M)	$68,502	$3,222	797	$1,819	$97	4493	$66,683	3.15	***
Return on assets	4.55%	5.82%	765	-14.23%	189.00%	4229	18.78%	2.87	***
Debt to assets	25.89%	22.40%	788	27.75%	1984.00%	4293	-1.86%	-1.08	
Market to book	3.14	1.97	733	3.33	1.35	4307	-0.19	-0.27	
CHS	30.67%	24.29%	642	21.30%	6.38%	4200	9.37%	5.72	***

Table 3. Characteristics of the sample of SWF investments and the benchmark sample of investments in publicly traded firms--Continued

Panel B: Binary variables

	SWF			Benchmark			Difference		
Variable	Proportion	Obs	Obs =1	Proportion	Obs	Obs =1	Proportion	*Chi-square*	
Foreign	88.93%	894	795	16.50%	5350	883	72.42%	2040.70	***
Control	4.09%	782	32	12.59%	3883	489	-8.50%	46.56	***
First Investment	46.42%	614	285	24.67%	3558	878	21.75%	124.26	***
Capital Injection	10.44%	900	94	13.16%	5350	704	-2.71%	4.86	**
Crisis	51.44%	900	463	3.94%	5350	211	47.50%	1801.78	***
Target country common	77.84%	898	699	61.12%	5350	3270	16.72%	92.03	***
Regulated industry	48.11%	898	432	39.78%	5350	2128	8.33%	21.72	***

Table 4. Short-term market reaction to announcements of SWF and benchmark investments

This table includes cumulative abnormal stock returns, computed in U.S. dollars, for target firms' common equity on the days surrounding the announcement of an investment. Daily abnormal returns are computed using a market model with parameters estimated over 250 trading days ending 20 trading days prior to the investment announcement. "Interval" indicates the time interval of interest relative to the date of the announcement of the investment (day 0). Observations (Obs.) reports the number of observations. Mean cumulative abnormal return ("Mean CAR") and "Median cumulative abnormal return" ("Median CAR") report, respectively, average and median abnormal cumulative returns. "Difference in means" reports the difference between the mean CAR for the SWF sample and the mean CAR for the benchmark sample. *t*-stat reports the *t*-statistic from a two-sample test for differences in means. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

	SWF			Benchmark			Difference in means (SWF-Benchmark)	*t*-stat	
Interval	Mean CAR	Median CAR	Obs	Mean CAR	Median CAR	Obs			
(0,0)	0.49%	0.01%	738	2.27%	0.11%	4463	-1.78%	-5.09	***
(-1,+1)	0.38%	0.02%	738	4.45%	0.83%	4463	-4.08%	-7.78	***

Table 5. Decomposition of announcement period abnormal returns

This table includes mean cumulative abnormal stock returns (CARs), in U.S. dollars, for target firms' common equity on the days surrounding the announcement of an investment. Daily abnormal returns are computed using a market model with parameters estimated over 250 trading days ending 20 trading days prior to the investment announcement. Returns are cumulated over the three-day trading period surrounding the announcement of the investment (day 0). Cumulative abnormal returns are computed for the sample of SWF investments for which matched observations and returns data are available. The matched sample is matched on target and deal characteristics, based on the model presented in Table A1 in the Appendix. Cumulative abnormal returns are winsorized at the 1st and 99th percentiles; means are tested using *t*-statistics computed with standard errors clustered at the SWF level. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

	N	Mean CAR (-1, +1)		*t*
SWF	558	0.50%		0.59
Matched	558	1.81%	*	1.85
SWF Discount	558	-1.31%	***	-3.77
SWF Discount (SWFs from democratic countries)	320	-1.12%	***	-4.98
SWF Discount (SWFs from autarchic countries)	234	-1.57%	*	-2.14

Table 6. Regression analyses of the SWF discount

This table includes coefficient estimates from OLS regressions. The response variable is the "SWF discount," or the difference between market-model cumulative abnormal return over the three-day window surrounding an investments announcement for the SWF investment and a propensity score matched private-sector investment. All predictors are described in Table 1. Target country and year fixed effects are included. Standard errors are robust and clustered by SWF; *t*-statistics are reported below the coefficient estimates. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

Variable	Discount (-1, +1)	Discount (-1, +1)	Discount (-1, +1)
Intercept	-0.1311 *	-0.0930	-0.2674 ***
	-1.84	*-0.67*	*-3.55*
SWF autarchic		-0.0101	0.1239
		-0.17	*1.40*
SWF Norway		0.0064	0.0132
		0.12	*0.25*
SWF independence		-0.1764	
		-1.25	
SWF political index			0.0986
			1.53
SWF autarchic × SWF independence		0.1034	
		0.75	
SWF autarchic × SWF political index			-0.0824
			-1.35
Director	-0.0315	-0.0168	-0.0128
	-0.91	*-1.29*	*-0.92*
Control	-0.1621	0.0635 ***	0.0702 ***
	-1.13	*3.75*	*3.71*
Stake	0.0030	0.0009 **	0.0005 *
	1.67	*2.75*	*1.82*
Foreign	0.0367 *	0.1087 ***	0.1142 ***
	1.95	*4.61*	*5.34*
Direct investment	-0.0042	0.1129 ***	0.1079 ***
	-0.23	*8.06*	*5.97*
Unique acquirer	0.0541 *	0.0534	0.0678 **
	2.04	*1.69*	*2.20*
Regulated industry	0.0039	0.0002	0.0002
	0.44	*0.05*	*0.06*
SWF autarchic × Director		-0.0433	-0.0492
		-1.25	*-1.40*
SWF autarchic × Control		-0.2832 *	-0.288 *
		-1.93	*-1.98*
SWF autarchic × Stake		0.0027	0.0030
		1.32	*1.52*
SWF autarchic × Foreign		-0.0418	-0.0667 **
		-1.44	*-2.31*
SWF autarchic × Direct investment		-0.1632 ***	-0.1505 ***
		-5.18	*-4.45*
SWF autarchic × Unique acquirer		n.a.	n.a.
SWF autarchic × Regulated industry		0.0025	0.0052
		0.09	*0.19*
Obs	513	513	513
Adjusted R-squared	15.80%	17.80%	17.38%
Year FE	Y	Y	Y
Country FE	Y	Y	Y

Table 7. Analysis of long-term performance changes after investment

This table presents mean changes (differences) in *Return on asset*s and *Market to book ratio* (as defined in Table 1) for both the sample of SWF investments and for the benchmark sample. Variables are measured as of Dec. 31 of each year. The base value is as of Dec. 31 of the year preceding the investment. The difference reported for year 1 is the difference between the value as of Dec. 31 of the year following the investment and Dec. 31 of the year preceding the investment and values for years 2 and 3 are similarly computed. The related *t*-statistics refer to tests for means, with the null hypotheses being that the mean is equal to zero. "Difference" reports the difference the difference between the mean change for the SWF sample and the mean change for the benchmark sample. The statistical significance of mean differences is tested with two-sample *t*-tests. Obs. reports the number of observations. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level. Panel A reports results related to *Return on assets*. Panel B reports results related to *Market-to-book* ratios.

Panel A: *Return on assets*

Δ *Return on assets* (change relative to the year prior to the investment)	Year	Mean	Median	*t*-stat		Obs
SWF	1	-1.92%	-0.90%	-3.63	***	682
	2	-0.96%	-1.05%	-1.84	*	616
	3	-1.59%	-1.09%	-3.12	***	565
Benchmark	1	2.04%	0.01%	3.21	***	3044
	2	3.89%	0.41%	5.78	***	2619
	3	1.85%	0.01%	2.46	**	2186
Difference	1	-3.96%	-0.91%	-4.77	***	
(SWF-Benchmark)	2	-4.85%	-1.46%	-5.7	***	
	3	-3.44%	-1.10%	-3.79	***	

Panel B: *Market to book*

Δ *Market to book* (change relative to the year prior to the investment)	Year	Mean	Median	*t*		Obs
SWF	1	-1.50	-0.61	-8.19	***	682
	2	-1.30	-0.46	-6.22	***	616
	3	-1.35	-0.63	-5.31	***	565
Benchmark	1	0.06	-0.04	0.7		3080
	2	0.02	-0.05	0.24		2660
	3	0.19	-0.05	1.5		2217
Difference	1	-1.57	-0.57	-7.64	***	
	2	-1.32	-0.41	-5.62	***	
	3	-1.53	-0.58	-5.46	***	

Table 8. Operating performance regressions

This table includes coefficient estimates from OLS regressions. The response variables are differences (between a SWF investment target and propensity-score matched private-sector target) in percentage change in return on assets (in column 1) and market-to-book ratio (in column 2), between December 31 of year (*t*+1) and December 31 of year (*t*-1), where year (*t*) is the year of investment. All variables are described in Table 1. Target country and year fixed effects are included. Standard errors are robust and clustered by SWF; *t*-statistics are reported below the coefficient estimates. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

Variable	Δ ROA %	Δ MTBV %
Intercept	6.9607	0.3121
	0.78	*0.28*
SWF autarchic	7.0385	-1.5673
	1.45	*-0.83*
SWF Norway	4.8325	1.9715
	1.07	*1.15*
SWF independence	-7.8621 *	0.8543
	-1.94	*1.60*
SWF autarchic × SWF independence	na	na
Director	0.3532	1.0665 ***
	0.44	*3.62*
Control	-4.6062	-2.0722
	-1.30	*-1.38*
Stake	0.1916 **	0.0860
	2.50	*1.29*
Foreign	3.025 **	-5.5881
	2.17	*-1.72*
Direct investment	3.9077 *	-2.3173 *
	1.82	*-1.81*
Unique acquirer	-4.0344	-0.1955
	-0.83	*-0.20*
Regulated industry	0.0387	-0.2036 **
	0.08	*-3.01*
SWF autarchic × Director	0.0441	-1.7011 **
	0.04	*-2.21*
SWF autarchic × Control	na	na
SWF autarchic × Stake	-0.1564 *	-0.0625
	-1.92	*-0.86*
SWF autarchic × Foreign	-5.6436	4.8806
	-1.46	*1.52*
SWF autarchic × Direct investment	-4.9191 **	1.6581
	-2.62	*1.12*
SWF autarchic × Unique acquirer	na	na
SWF autarchic × Regulated industry	1.3621	0.7220
	0.66	*0.82*
Obs	365	362
Adjusted R-squared	95.44%	24.10%
Year FE	Y	Y
Country FE	Y	Y

Table 9. Signals of passive investments, democratic vs. autarchic SWFs

This table includes descriptive statistics for the sample of SWF investments. For each variable, the table reports the mean and number of observations for the sub-sample of SWFs based in democratic countries and for the sub-sample of SWFs based in autarchic countries, the difference between means and the results of a two-sample *t*-test. Variables are defined in Table 1. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

	SWF democratic		SWF autarchic				
	Mean	Obs	Mean	Obs	Difference	*t*-stat	
SWF independence	83.07%	425	38.32%	473	44.74%	184.14	***
Director	1.88%	425	7.61%	473	-5.73%	14.56	***
Control	0.97%	414	7.61%	368	-6.64%	20.24	***
Stake	1.59%	414	15.32%	368	-13.72%	-11.26	***
Foreign	94.79%	422	83.69%	472	11.10%	26.76	***
Direct investment	5.65%	425	61.10%	473	-55.45%	300.72	***
Unique acquirer	99.76%	425	96.19%	473	3.57%	12.11	***
Regulated industry	46.82%	425	49.26%	473	-2.44%	0.44	

Appendix
Table A1. Probability of SWF as an acquirer determined from a probit model

This table includes coefficient estimates from a probit model. The response is a binary variable assuming the value of one if the investor is a SWF or a SWF-majority-owned subsidiary and zero otherwise. Variables are defined in Table 1. Industry and year fixed effects are included, but related coefficient estimates are omitted. Standard errors are clustered at the investment target level; Wald's chi-square test statistics are reported in parentheses below the related coefficient estimates. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 level.

Variable	SWF Acquirer
Intercept	-7.8694***
	(49.4011)
Foreign	-1.3965 ***
	(83.1869)
Total assets (log)	0.3856 ***
	(99.1662)
Return on assets	0.0204 ***
	(6.6507)
Debt to assets	-0.0033
	(0.6352)
Market to book	0.0139
	(0.4464)
Closely held shares	-0.0001
	(0.0876)
Buy and hold abnormal return, market adjusted, previous year	0.2126 **
	(6.0246)
Target country GDP per capita (log)	-0.0120
	(0.0199)
Target country GDP growth	0.0388
	(1.3782)
Market capitalization to GDP	-0.0007
	(0.1701)
Target country common	0.8504 ***
	(15.405)
Democracy index, target country	-0.031 **
	(4.0016)
Crisis	1.4628 ***
	(57.2322)
Capital injection	0.4685 **
	(4.7678)
Control	1.1155 **
	(5.0576)
Stake	-0.0248 ***
	(9.777)
First investment	0.5041 ***
	(19.1403)
Obs	2,886
Percent concordant	98.4%
Percent discordant	1.5%