ecgi

Sovereign Wealth Funds: Investment Choices and Implications around the World

Finance Working Paper N°. 238/2009
February 2009

Nuno Fernandes
IMD International and ECGI

Sovereign Wealth Funds: Investment Choices and Implications around the World*

Nuno Fernandes
IMD International

This version: May 2009
First Version: September 2008

Abstract: This study focuses on a major global issue: the rise of sovereign wealth funds (SWFs). Using the largest data set of their holdings to date, we document a large SWF premium of more than 15% of firm value. Using data from 2002 through 2007 that includes SWF holdings in 8,000 firms in 58 countries, we find that firms with higher ownership by SWFs have higher firm valuations and better operating performance. Additionally, they tend not to invest heavily in firms in high-tech industries or those operating in areas involving intensive research and development.

JEL classification: G15, G20, G23, G28, G32
Keywords: Sovereign Wealth Funds, International Capital Markets, Investment Choices, Institutional Investors

* IMD, Ch. de Bellerive 23, P.O. Box 915, CH1001 Lausanne, Switzerland. Email: nuno.fernandes@imd.ch. I am grateful to Arturo Bris, José Manuel Campa, Miguel Ferreira, Pedro Matos, seminar participants at IMD/ONI Innovation Forum for useful discussions and comments. I would like to thank Michael Sorell for excellent research assistance.

Lack of confidence in financial markets following the 2008 crash has driven investors and funds away from corporations. As corporate balance sheets come under increasing strain, firms need more and more capital. In this setting, sovereign wealth funds (SWFs) have emerged as the funding source of the future. According to the Sovereign Wealth Fund Institute, SWFs manage more than USD 3 trillion, a number that can be put into perspective by considering that the hedge fund and private equity markets combined account for less than USD 2 trillion. Some estimates suggest that SWFs will manage more than USD 10 trillion by 2015 (*Financial Times* Special Report (2008); Lyons (2007)).

In this paper, we study the changing pattern of world capital markets and analyze the role of SWFs. We examine what drives SWFs to invest in firms and what role these investors play. We are interested in the impact that SWFs have on a firm's value and performance.

To answer these questions, we construct the most extensive and thoroughly documented set of observations of SWF investments to date, extending from the beginning of 2002 through the end of 2007. Across this time frame, the data set contains investments of SWFs in more than 8,000 firms in 58 countries.

We first document the "Sovereign Wealth Fund premium." Controlling for a variety of firm and country characteristics, across different samples and specifications, we find a significant premium—between 15% and 20% of firm value—associated with SWF investments in a firm. Furthermore, the impact of SWFs goes beyond that of the typical institutional investor: The market pays on

average a higher premium for firms in which SWFs have a significant stake than for firms owned by general institutional investors. This evidence is not consistent with the idea that SWFs extract private benefits of control or that they may be investing with hidden political agendas or to expropriate minority shareholders.

We also assess whether SWF ownership has an impact on operational measures of performance. We find a positive association of SWF investments with ROA (return on assets), ROE (return on equity), and net profit margin. The positive impact documented on a firm's value is fully consistent with the evidence of improved performance of firms in which SWFs invest. This improvement in value and performance is also consistent with event-study evidence on the market reaction to SWF announcements. There have been a few recent attempts (Chhaochharia and Laeven (2009), Dewenter et al. (2009), Fotak et al. (2008), and Kotter and Lel (2008)) at studying the impact of SWF investments in firms, based on small samples (between 75 and 200 firms). Although they use different samples, each of the papers finds positive abnormal returns upon announcement of the SWF investment.

We assess whether the results are driven by any particular SWF. The results are robust to the exclusion of any SWF from our sample. Further, the results show that SWF holdings are associated with higher firm value, both for holdings from more transparent funds and for less transparent funds.

In addition to the value creation role of SWFs, we also study the selection process of SWFs by investigating the determinants of their holdings. SWFs invest in virtually all countries in the developed world and a few emerging market

economies. As market players, they are certainly a driving force, holding positions in virtually one out of every five firms worldwide.

In terms of determinants of their holdings, first we find that all SWF investors prefer the stock of large and profitable firms. Second, they have a strong bias for firms that have external visibility. They tend to choose stocks with high analyst coverage. Third, SWFs tend to hold stocks in countries that have strong governance standards and efficient institutions. Finally, their holdings are not related to the amount of research and development (R&D) activity at the firm level, which contradicts the political argument that one of their motives might be to import innovation to their home countries through the "backdoor." Additional evidence suggests that SWFs are also not particularly concerned with stock liquidity, which is a characteristic typically valued by short-term investors.

We contribute to the literature on corporate governance around the world by adding to the debate on what kind of monitoring by institutional investors is effective. Shleifer and Vishny (1986) present a theory of the relationship between shareholder size and corporate governance. Several papers have found evidence consistent with a monitoring role for large shareholders (Franks and Mayer (2001), Gillian and Starks (2007), Chen et al. (2007), Ferreira and Matos (2008), among others). Burkart et al. (1997) developed a model that considers the trade-off between the benefits of concentrated ownership (monitoring) and the associated costs (threat of expropriation). There is also evidence that concentrated ownership may be associated with the extraction of private benefits of control and, therefore,

should be associated with decreasing value (Dyck and Zingales (2004); Doidge et al. (2008a)).

In principle, SWFs invest in equities with the purpose of maximizing the return on their country's reserves. By taking sizeable (and long-term) stakes in corporations, they can perform a corporate governance role that other shareholders should welcome. On the other hand, because they are powerful investors, there is no reason why we should not expect SWFs to expropriate minority shareholders and pursue interests other than maximizing portfolio performance.

Our findings have important implications for the policy debate about SWF investment and regulation. Our results suggest that SWFs are not short-term holders and appear to generate substantial value for firm shareholders. The controversy around SWFs is more political than financial because, typically, SWF ownership is positively valued by the market, with a premium amounting to 15% to 20% of firm value. This suggests that contrary to arguments that SWFs expropriate minority investors and pursue detrimental political agendas, they in fact contribute to long-term shareholder value creation and bring about larger value increases than other institutional investors. These observations, and other evidence presented in this paper, challenge the premises of proposals to increase SWF regulation.

The rest of the paper is structured as follows. Section I provides an introduction to SWFs and the controversies that surround them. Section II describes the sample. Section III looks at how SWFs invest. Section IV analyzes

firm performance and valuation implications of SWF investments. Section V concludes the paper and discusses some implications of our work.

I. The Sovereign Wealth Fund Controversy

Given their increasing size, SWFs have recently been widely discussed. However, much of the commentary on them is based on anecdotal evidence. Large-sample, hard evidence on SWFs is lacking. As a result, even the most basic questions about SWF investments remain unanswered.

SWFs have existed at least since the 1950s—the Kuwait Investment Office was set up in 1953—but their total size worldwide has increased substantially over the past 10–15 years. Oil-producing nations set up the first wave of SWFs after the price increases in the 1970s and 1980s. Because oil is a nonrenewable resource, the underlying idea was that governments wanted to spread the benefits of this endowment across generations by investing part of today's income in financial assets. The crisis in East Asia in the late 1990s resulted in a second wave of SWFs being set up. After the crisis, most emerging markets in the region shifted from being debtors to being creditors. Many of these countries now prudently hold more reserves than needed. As in many other markets, China's strong manufacturing growth has not been matched by higher domestic spending and investment. Savings have thus begun to accumulate in an SWF. This led to the recent creation (in September 2007) of the China Investment Corporation, the large Chinese SWF with more than USD 200 billion in assets under management.

Most of the savings in SWFs have accumulated in the form of foreign currency reserves, with the traditional investment vehicles being debt instruments such as government bonds from industrialized nations. The low returns on these investments, however, have prompted nations with excess foreign reserves to invest in equities to achieve higher returns. These expanded activities over the past several years have led to concerns that SWFs can destabilize financial markets and the global economy if their investments are motivated by political rather than economic considerations.

The first SWF, the Kuwait Investment Office, ran into trouble in the U.K. in 1987 when it acquired a stake of more than 20% in British Petroleum (recently privatized). The U.K. government, headed by Margaret Thatcher at the time, did not like the idea of an important national asset being owned by a foreign government. In the end, the Kuwaitis had to sell more than half their stake.

The recent emergence and size of SWFs such as the China Investment Corporation (CIC) has provoked intense political debate in Western countries (Summers (2007)). The main concern centers on CIC's objectives and how far its investments will be driven by purely financial considerations. Other concerns include low transparency, obscure motives underlying the purchase of strategic assets, possible breach of national security as a result of this "pseudo-government" ownership, and the influence SWFs may obtain in the management of the firms in which they hold shares. In 2005, a Chinese oil company, CNOOC, tried to acquire Unacol, a U.S. oil company. The deal was blocked in Washington on grounds of "national security and strategic interests." In 2006, DP World, a port operator

owned by the government of Dubai, sought to take over P&O's business in America, which included terminals in New York and New Jersey. This provoked intense debate in the U.S. on the need to review foreign investments in strategically important sectors and sensitive infrastructure, such as the oil industry and marine cargo facilities. Several other Western countries have expressed concerns about SWFs. The German government, for example, has announced that it would introduce controls on investments by SWFs, especially if they seek stakes in strategic sectors. French President Nicolas Sarkozy has announced that he would use his country's state-owned bank (Caisse des Depots et Consignations) to help protect French companies against potential takeover threats posed by SWFs. (The Economist (2008)).

Although most SWFs have so far declined a seat on the management boards of the companies they have invested in, there is suspicion that they may exert influence behind the scenes. Critics argue that SWFs do not need to appoint directors to a board in order to have influence when they own 10% of a company. Particularly relevant is the case of Saudi Arabia's Prince Al-Walid bin Talal, who does not have a seat on Citigroup's board. He is, however, thought to influence the decision-making process, an example being the ouster of chief executive Charles O. Prince III (Dash, 2007).

II. Data Description

The initial sample includes all firms in the Datastream/WorldScope (DS/WS) database for the years 2002 through 2007. Using Worldscope and Datastream, we construct measures of firm size (logarithm of firm total assets), financial leverage (total debt divided by total assets), return on equity (ROE), return on assets (ROA), dividend yield, the ratio of cash to total assets, the ratio of capital expenditures to total assets, the ratio of R&D to total assets, stock returns, turnover, and firm growth opportunities (sales growth).

In addition to the variables that are related to the business model and financial performance of the firm, we also use a number of variables pertaining to external visibility. We use the percentage of foreign sales (FX sales) as a proxy for the product market's recognition abroad and the number of analysts (Analysts) following a firm in a certain year (Institutional Brokers' Estimate System or IBES) as a proxy for the level of information available to investors. MSCI is a dummy variable that equals one if the firm is a member of the MSCI All Country World index, and zero otherwise. We also include information on cross-listings. ADR (American Depository Receipt) is a dummy that equals one if a company is cross-listed in a U.S. exchange in that year. We used several data sources to determine which non-U.S. firms are cross-listed in the U.S. and when they entered and exited the listing.[1]

[1] Data on non-U.S. firms listing in the U.S. market are obtained from the major depository institutions: Citibank, Bank of New York, JP Morgan, stock exchanges, SEC, and news searches.

We include several country-level variables that have been shown to be related to international investment choices of big institutions (e.g., Gompers and Metrick (2001); Ferreira and Matos (2008)). We use the anti-self-dealing index (ANTISELF) constructed by Djankov et al. (2008). This index measures the ex-ante and ex-post effectiveness of regulation and enforcement against violators and refers to 2003. We also use several macroeconomic performance indicators (GDP per capita, ratio of market capitalization to GDP, ratio of stock turnover to GDP from the World Development Indicators (WDI) and Datastream).

The valuation measure we use is Tobin's Q, which we compute as follows. For the numerator, we start with the book value of total assets, subtract the book value of equity, and add the market value of equity. For the denominator, we use the book value of total assets. In addition, we construct a global industry Q, which equals for each year, the median Q in the industry to which the firm belongs (based on 2-digit SIC codes).

We winsorize financial ratios such as Tobin's Q, return on equity, and leverage at the bottom and top 1% levels.

Table I provides details of the control variables used.

A. A New Database on SWFs

Table II describes the main SWFs around the world and their size (in absolute terms and relative to the country population). The biggest SWF is the Abu Dhabi Investment Authority (ADIA), with assets under management of more than

USD 870 billion at the end of 2007, making it a comparable player to Vanguard. This fund is also the largest in the world in terms of wealth per capita. The assets under management are close to USD 200,000 per capita.

We construct a novel data set of SWF international holdings since 2002. Our data collection follows a three-step procedure. As a first step, we use the Sovereign Wealth Fund Institute (Table II) list of SWFs and concentrate on the top 20 funds. These funds represent 97% of the SWF universe.

In our second step, we gather all ownership information for these funds from many different sources. We start with the SWF Institute Web site, which contains information for some funds. We then use each individual fund's Web pages. Although the average fund transparency is low, some funds provide detailed information on their holdings in their annual reports.[2] We then obtain stock holdings data from the FactSet/LionShares database, together with Thomson Financial. These are the two leading information sources for global institutional ownership. They gather holdings information from mandatory filings with national regulatory agencies (e.g., Form 13F filings with the Securities and Exchange Commission or Share Register in the U.K.) as well as stock exchange announcements, company proxies, and annual reports. We also merged additional holdings using purchase transactions from the Security Data Corporation (SDC) database.

In the final step, we conduct extensive news searches in Factiva using different combinations of the funds' names as key words.

[2] We discuss the different transparency levels of SWFs in Section IV B.

The data set offers a unique worldwide panel data for each year over the 2002–2007 period. Our data set covers SWFs' holdings in more than 8,000 firms in 58 countries.

Table III describes our database, and reports the number of holdings for each fund at the end of 2007, as well as the total market value of the positions. It also describes the average position held by each fund. At the end of 2007, our database includes USD 370 billion of SWFs' holdings in publicly traded firms.

Table IV reports the number of firms in different countries and industries in which SWFs invest at the end of 2007. SWFs invest in virtually all countries in the developed world as well as in several emerging market economies. Across countries, we find that the number of holdings varies from 1 (in the Czech Republic) to 2,240 (in the U.S.)—Panel A of Table IV. Overall, SWFs invest in close to 20% of firms around the world. Panel B shows the industrial composition of their investments.

Following Gompers and Metrick (2001) and Ferreira and Matos (2008) in their analysis of institutional ownership, in our empirical analysis, we define total SWF ownership (SWF_TOTAL) as the sum of the holdings of all SWFs of a firm's stock divided by market capitalization at the end of each calendar year. We sum SWF positions in local and ADR shares (if the firm held is cross-listed in the U.S.). We define a dummy variable for large equity investments by SWFs (SWF Dummy) that equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise.

III. Which Companies Do SWFs Choose?

What kind of characteristics do SWFs look for when choosing their investments? We explore the determinants of the choices by SWFs of different stocks worldwide. First, we examine the role of different firm characteristics related to the business model. We then examine the role of visibility, capital market conditions, and also country-level development, and quality of institutions. We also ask whether stock selection is determined mainly by the firm's characteristics, business model and operating environment, or, alternatively, by country characteristics, such as its level of development and the quality of its legal institutions.[3]

We explore the effects of country and firm characteristics on the probability of being chosen by an SWF, using probit regressions. Table V reports results from probit multivariate regressions of SWF Dummy to assess the marginal effect of each covariate.

SWF Dummy equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise. The probit is estimated using data from 2007. In all specifications, we cluster standard errors at the country level. Size is the log of total assets in USD; leverage is the ratio of total debt to total assets; INVOP is a proxy for investment opportunities, computed as the 2-year geometric sales growth; ROE is the return on equity; DY is the dividend yield; R&D

[3] Other studies have analyzed the preferences of institutional investors in the U.S. (Gompers and Metrick (2001)) and internationally (Ferreira and Matos (2008)); foreign holdings by investors from one single country (U.S. investors, as in Aggarwal et al. (2005); Ammer et al. (2005)); country-level institutional holdings or block holdings (Chan et al. (2005)); and holdings from mutual funds (Covrig et al. (2006)).

is the ratio of R&D spending to total assets; CAPEX is the ratio of capital expenditures to total assets; Cash is the ratio of cash holdings to total assets; ADR is a dummy equal to one if the stock is cross-listed in U.S. exchanges, and zero otherwise; FX sales is the percentage of foreign sales; Analysts is the number of financial analysts following the firm; MSCI is a dummy variable that equals one if the firm is included in the MSCI index, and zero otherwise; Return is the return in the past year; Turnover is the trading volume divided by shares outstanding; and ANTISELF is the anti-self-dealing index constructed by Djankov et al. (2008). This index measures the ex-ante and ex-post effectiveness of regulation and enforcement against violators. GDP is the GDP per capita from the World Bank, used as a proxy for economic development; MCAP/GDP is the ratio of country market capitalization to GDP, a proxy for financial development computed using World Bank and Datastream data; and Turnover_ct is the ratio of country value traded to GDP, a proxy for liquidity of financial markets computed using World Bank and Datastream data.

The results in column (1) of Table V show that there is a strong demand by SWFs for large stocks (SIZE). This is consistent with findings in Gompers and Metrick (2001) and Ferreira and Matos (2008). The regression also shows that SWFs have a tendency to invest in companies with proven profitability (ROE). This is consistent with the “prudent man” rules that money managers are likely to follow (Del Guercio (1996)). They also reveal a preference for firms with lower leverage ratios.

One political argument traditionally raised is the fear that SWFs invest in Western corporations as a means of gathering corporate intelligence. Our results do not support this interpretation. As indicated in column (1) of Table V, SWFs do not have any particular preference for high-tech firms (as proxied by the ratio of R&D to assets) among the universe of public firms.

Firm visibility can play a role in the choices made by SWFs, as suggested by market segmentation theories (Merton (1987)). We investigate the role of company visibility characteristics in column (2). We study the role of U.S. cross-listings, MSCI index membership, analyst coverage, and foreign sales as determinants of SWF investments. Overall, we find that SWFs show a strong demand for stocks with high analyst coverage. They do not, however, reveal any strong demand for firms that belong to MSCI indices. The index membership result is interesting, as SWFs, unlike regular mutual funds, have no strong business concerns in terms of performance and flows. The money that flows into the fund is far less dependent on performance or any benchmarking, as sovereign funds do not seek new client investment, relying as they do on their respective domestic economies.[4]

In column (3), we add variables related to capital markets. We do not find that SWFs have a strong preference for liquid stocks, as the coefficient on turnover is not significant. This is consistent with the evidence that SWFs tend to be long-term investors, so liquidity is not a major concern. We also do not find that SWFs are momentum investors. The coefficient on past yearly return of the stock is

[4] We thank Thomas Karol of the Sovereign Investment Council for this comment.

negative, but not significant. The results also suggest that SWFs have a preference for shares held by other institutional investors.

In column (4), we combine firm- and country-level determinants of SWF holdings. Firms in countries with weak anti-self-dealing regulations have, on average, lower SWF holdings. In other words, SWFs are more prone to investing in countries where the legal regime guarantees a minimum of protection to their investment. The coefficients on GDP, market development, and country liquidity are not significant. We interpret this to indicate that economic and financial development is not the main driver of selections made by SWFs and that the quality of institutions is a much better determinant.

To maximize the potential explanatory power of country characteristics, in columns (5)–(7) we include country fixed effects. This estimation accounts for all unobserved sources of SWF selection procedures that can be attributed to the country's environment. All previous results remain unchanged: SWFs prefer large firms with high analyst coverage. They do not chase momentum stocks, nor do they prefer highly liquid or high-tech firms. SWFs also do not have a preference for cross-listed stocks. In addition, they tend to invest more in companies with higher capital expenditure ratios and lower leverage.

Interestingly, R2 increases from 15% (in column (3)) to 18% (in column (7)) when we add country fixed effects. The low increase in R2 suggests that firm-specific factors are a very important driver of the global variation of SWF holdings, much stronger than country-level factors.

IV. The Sovereign Wealth Fund Premium

In this section, we first test the effect of SWF ownership on firm valuation. Then we check whether SWF ownership also has an influence on firms' operating performance.

To investigate the relationship between SWF ownership and firm value, we use Tobin's Q as a measure of firm value, calculated as the book value of total assets plus the market value of equity minus the book value of equity divided by total assets.

We estimate regressions of a firm's Tobin's Q on variables associated with firm value such as SIZE, growth opportunities (INVOP), leverage (LEVERAGE), cash holdings (CASH), cross-listing dummy (ADR), and median Tobin's Q for the firm's global industry (Q_INDUSTRY) following Doidge et al. (2004).

We restrict the sample to firms with a market capitalization above USD 10 million.[5] Cross-sectional dependence across firms in a given year is a concern associated with Tobin's Q regressions. Another concern is that errors are correlated across time for a given firm (time-series dependence). We address these issues by using standard errors adjusted for clustering at the firm level and year dummies in our panel regressions (Petersen (2008)).

[5] In Table VII we show that the results are not affected by this procedure.

Table VI presents the estimates of the annual time-series cross-sectional regressions for Tobin's Q for our worldwide sample of firms over the 2002–2007 sample period. Panel A presents the results using a dummy variable for large equity investment by SWFs (SWF Dummy) that equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise. In Panel B, we present results using the percentage of ownership by SWFs for all firms in the database without any threshold restriction.

In column (1) of Panel A, we only control for firm size and global industry Q. We find a positive and significant relation between SWF holdings and firm value. The coefficient on SWF Dummy is +0.31. Given that the mean Tobin Q in the overall sample of firms is 1.70, this represents an improvement of 17% in firm value. In column (2), we include additional firm-level control variables, namely, the cash holdings, ADR dummy, investment opportunities, and leverage. In this estimation, the coefficient on the SWF variable is +0.3532 (roughly 20% of the average Tobin's Q). Other control variable coefficients are, in general, consistent with previous findings: Smaller firms, firms with investment opportunities, cash-rich firms, and firms with a U.S. cross-listing have higher valuations. The magnitude of the coefficients is also comparable to previous results on international determinants of Q (e.g., Doidge et al. (2004); Doidge et al. (2008b)).

Institutional ownership, in general, is associated with higher firm valuations. McConnell and Servaes (1990) and Gompers and Metrick (2001) find a positive valuation effect of institutional equity ownership for U.S. firms. In a large

international sample, Ferreira and Matos (2008) also find that firms with higher ownership by institutional investors have higher firm valuations. In column (3), we disentangle the effects in terms of SWF ownership and institutional ownership in general. Consistent with previous results, we find that institutions have a positive and significant effect on firm value. Importantly, there is an independent effect of SWFs. When controlling for the overall level of institutional ownership, there is still a significant premium associated with SWF ownership. If we include country characteristics, namely the anti-self-dealing index, the GDP and proxies for financial development and market liquidity, a similar picture emerges (Column (4)).

Columns (5)–(8) present estimates for the specifications in columns (1)–(4), but including country fixed effects in addition to year fixed effects, to account for all potential unobserved heterogeneity across countries. Our estimates are qualitatively invariant. The economic and statistical significance of the SWF valuation effect is barely affected. In column (8), the coefficient on SWF Dummy is +0.3432 with a statistically significant *t*-statistic.

In Panel B we use the continuous variable of percentage of SWF ownership (and not SWF Dummy). We use the same control variables as in Panel A. To be consistent with the SWF ownership variable definition in this table, we use the percentage holdings by institutional investors (IO percentage) as an additional regressor. Columns (1) to (4) include year fixed effects and firm-level clustered standard errors. Columns (5) to (8) include year and country fixed effects together with firm-level clustered standard errors; there is no significant difference here from

the primary findings. As found in Panel A, the results suggest that firms with a larger percentage of ownership by SWFs have higher Tobin's Q.

It follows from Table VI that (a) there is an SWF premium that amounts to between 15% and 20% of a firm's value, (b) it is robust to controlling for a firm's growth opportunities, (c) it is robust to controlling for a firm's cross-listing and institutional ownership, (d) it is robust to controlling for investor protection, capital market development, and other country factors. These results hint at the value-enhancing role of SWFs for corporations worldwide. They are not just another institutional investor with a large share. Their ownership stake is significantly related to firm value, and the premium for SWF investments is significantly larger than the premium for regular institutional ownership.[6]

A. Robustness Checks

Table VII presents several robustness checks of the relation between firm value and SWF ownership. As before, we present results based on the dummy variable for large SWF investments (Panel A), and also based on the percentage holdings by SWFs (Panel B). We estimate all regressions, including country and year fixed effects, and all the control variables used in the more complete specification of Table VI. In all estimations, except column (2), standard errors are clustered at the firm level. Column (1) presents estimates of the Tobin's Q regression including all firms in our sample, without any restriction on firm size. As

[6] In Appendix 1 we present similar estimations using as dependent variable the log of Tobin Q. Overall, the results using Log(Q) corroborate the findings of a positive impact on firm value of SWF holdings.

before, there is a positive and significant SWF premium. A possible additional concern with our results is within-country correlation. To account for possible country-level correlation of the residuals, we estimate in column (2) the model with country-clustered standard errors, in addition to country and year fixed effects. The results remain unchanged. To obtain a more homogenous sample of firms across countries, columns (3) to (6) restrict the sample to firms with assets or market capitalization above a certain threshold. Columns (3) and (4) consider only firms with total assets above USD 10 million and USD 100 million, respectively. Columns (5) and (6) restrict the sample to firms with a market capitalization above USD 10 million and USD 100 million. Column (7) presents results of the estimation using only U.S. firms, while column (8) considers only non-U.S. firms. The basic results are unaffected by these sample variations.

So far, all the results have been based on our full sample period. Although we control for country and year fixed effects, and cluster standard errors at the firm level, there is still a possible concern with time-series dependence of the residuals. Column (9) reports the regression coefficients of a cross-sectional analysis, using only data from 2007. As before, we find a positive and significant relation between Tobin's Q and SWF ownership.

B. Additional Robustness: Does Any Fund Dominate the Results?

We investigate whether the positive valuation effect of SWFs is dependent on any particular fund's holdings. In particular, one of the largest SWFs in our sample, the

Norwegian SWF, represents more than 60% of the observations, although most are very small and diversified.

Table VIII presents a robustness check of the relation between firm value and SWF ownership, where we exclude all holdings of the Norwegian SWF from the sample. The percentage_SWF now equals the sum of ownership positions of all SWFs excluding the Norwegian SWF. The variable Dummy_SWF is equal to 1 only if other SWFs have more than 1% of ownership in a firm. In Panel A, we present the results using the dummy variable for large SWF investments, and in Panel B based on the percentage holdings by SWFs (other than Norway). The last column of both panels reports results that include country and year fixed effects, and all the control variables used in the more complete specification of Table VI, together with standard errors clustered at the firm level. The results are unaffected by the exclusion of the large Norwegian fund from the analysis. Even after excluding this large fund from our sample, the positive relationship between SWF holdings and firm value remains robust.

We perform similar analyses with all other SWFs. We redefine the ownership variables by excluding one by one all SWFs from the sample. The results are not dominated by any SWF in particular as the documented premium is robust to the exclusion of any SWF from our sample.

Some SWFs are reluctant to disclose much information about their investment policies and objectives. The lack of transparency has prompted a political discussion on whether and how to regulate SWF degrees of transparency. Several countries have called for greater openness on the part of the larger

"opaque" or nontransparent funds. Recently, an agreement was reached on general practices that should govern SWF investments, called the Santiago Principles.[7]

Thus, one might question whether the degree of transparency of different funds is impacting the results. In Table IX, we estimate the impact of SWFs on valuations, for different levels of transparency. We use the Linaburg–Maduell Transparency index (from the SWF Institute). This index rates SWFs on different disclosure policies that depict SWF transparency to the public, including providing up-to-date, independently audited annual reports, and providing ownership data and geographic locations of holdings.

We divide our SWFs' holdings into two groups, based on the median transparency score. Then, we compute the percentage of holdings by high-transparency funds, and by low-transparency funds. We compute new dummy variables for large holdings for each transparency group. Table IX presents the results. All regressions include country and year fixed effects, and all the control variables used in the more complete specification of Table VI, together with standard errors clustered at the firm level. Panel A uses the SWF Dummy for large positions, whereas Panel B uses the continuous variable of percentage holdings by high- and low-transparency funds. Column (2) shows the results for the high-transparency funds, and column (3) for the lowest levels of the transparency index. In both cases, there is a positive effect of SWFs' ownership on company values.

[7] IWG (International Working Group of Sovereign Wealth Funds) October 2008.

C. The Impact on Operational Performance

The premium documented is consistent with the view that SWF ownership is positively valued by the market and that SWFs are related to larger value increases than other institutional investors. It is, however, possible that SWFs simply identify undervalued companies but do not add to firms' fundamental value. If the increase in Q is a result of superior stock-picking capability, then we should observe no impact on firms' operating performance. If SWF ownership is related to value creation at the firm level, we should also see a positive impact also on non-stock-market measures of profitability.

To distinguish between these two hypotheses, we now present evidence of the impact of SWF on different measures of firms' operating performance. We use return on assets (ROA), return on equity (ROE), and operating profit margins (defined as EBITDA/sales and EBITDA/assets) as measures of operating profitability.

Figure 1 presents the results. We report the different performance metrics, before and after having SWF as a major shareholder using the SWF dummy. The results show that after an SWF acquires a stake larger than 1% in a company, overall operational performance improves. Using different periods before and after SWF investments, ROA, ROE, and operating profit margin are higher after their entry.

We also perform an analysis using a matching firm procedure. We construct a control sample of firms by matching our sample of SWF investments with firms from the same country, industry (2-digit SIC code), and similar market

capitalization in the year prior to the SWF investment. Then, following Karpoff et al. (1996), we compare the different measures of firm performance between the sample and control firms over three different periods: $t - 1$ to $t + 1$, $t - 1$ to $t + 3$, and $t - 3$ to $t + 3$, where t is defined as the year when SWFs obtained a significant stake in the sample firm. Results from these comparisons are reported in Table X. Using the 1-year-before to 1-year-after changes reported in Panel A, the average change in ROE is 2.08% for the sample firms, and 0.26% for the controls. This difference is significant, as indicated by the *t*-statistic of the test for different changes in our sample and the control group. In Panel C of Table X, the 3-year-before to 3-year-after change in ROE for the firms where SWFs take large positions is 3.41%, whereas for the control group is 1.14%.

Across the three different windows, firms in which SWFs invest achieve improved performance after their investment. Except for the EBITDA/Assets margin in the 1-year-before to 1-year-after analysis, all other results suggest that compared to a matched sample of country/industry/size firms, firms experience a statistically significant change in the different profitability measures following a large SWF investment.

Thus, we find that a large SWF investment is not only associated with higher firm value, but also with improved operating performance at the firm level.

V. Conclusion

Although SWFs have recently been widely discussed, much of this discussion is based on anecdotal evidence. Regulators question whether SWF investments benefit shareholders, and numerous critics claim that SWF investment decisions are politically motivated.

This paper is the first attempt to study SWF equity holdings using a large-scale sample from 2002 through 2007. Our novel data set covers SWF investments across 58 countries during this period, and involves more than 8,000 unique companies.

The controversy around SWFs is more political than financial because SWF ownership is typically positively valued by the market. We document a significant premium on firm value for SWF investments (15% to 20%) as well as significant improvements in operating performance. This suggests that contrary to arguments that SWFs expropriate investors and pursue detrimental political agendas, they in fact contribute to creating long-term shareholder value.

Within any particular country, there is a wide dispersion of SWF ownership positions, and firm-level variables explain a substantial part of this finding. Although country characteristics are important, they are not the primary source of variation in SWF investment choices. Large, profitable firms are more likely to have SWFs as investors. Firms with higher analyst coverage are significantly more likely to have an SWF as an investor.

Ultimately, our work raises a number of questions and suggests different avenues of research. Given that SWFs manage assets well in excess of all hedge

funds and private equity firms combined, there are several issues that further research should address. Are SWFs proactive in the takeover market and do they block value-reducing acquisitions by the companies in which they invest? Do SWFs increase the takeover premiums in the companies in which they invest? In late 2008, Norway's Government Pension Fund opposed MidAmerican's (a unit of Buffett's Berkshire Hathaway Inc.) bid for Constellation, where Norway's fund had a 4.8% stake. MidAmerican Energy Company's bid was interestingly backed by Constellation's management itself. However, Norway's SWF considered the price insufficient, and it has taken MidAmerican to court. Is an SWF investment a guarantee of cheaper capital in the future, should the need arise? Are SWFs' political connections valuable? Brazil has recently established its own SWF, with the stated objective of buffering the country from the global financial crisis and helping Brazilian companies boost trade and expand overseas. It is likely that such international expansion is spurred by the appeal of the Brazilian government's policies for multinationals.

SWFs hold relatively small stakes on average. There is a real danger that some governments may play up the fear of SWFs to a level akin to protectionism. Often, this investment protectionism is disguised by claims of national security concerns. The evidence from this paper suggests that the majority of SWF investments do not involve partial or complete control of firms. Even for investments that are large (and may involve control), there is no evidence that they harm companies or extract inside information or technology. The overall evidence is that firms perform better, and are valued higher when SWFs invest in them.

References

Aggarwal, Reena, Leora Klapper, and Peter Wysocki, 2005, Portfolio preferences of foreign institutional investors, *Journal of Banking and Finance* 29, 2919–2946.

Ammer, John, Sara Holland, David Smith, and Francis Warnock, 2005, Look at me now: What attracts U.S. shareholders?, working paper, Federal Reserve Board of Governors.

Burkart, Mike, Denis Gromb, and Fausto Panunzi, 1997, Large shareholders, monitoring, and the value of the firm, *The Quarterly Journal of Economics* 112, Issue 3, 693–728.

Chan, K., V. Covrig, and L. Ng, 2005, What determines the domestic bias and foreign bias? Evidence from mutual fund equity allocations worldwide, *Journal of Finance* 60 1495–1534.

Chen, X., J. Harford, and K. Li, 2007, Monitoring: Which institutions matter?, *Journal of Financial Economics* 86, 279–305.

Chhaochharia, Vidhi and Luc Laeven, 2009, Sovereign Wealth Funds: Their Investment Strategies and Performance, working paper, *International Monetary Fund.*

Covrig, Vicentiu, Sie Ting Lau, and Lilian Ng, 2006, Do domestic and foreign fund managers have similar preferences for stock characteristics? A cross-country analysis, *Journal of International Business Studies* 37, 407–429.

Dash, Eric, 2007, Waning support led to ouster of Citigroup chief, *The New York Times*, November 6, 2007.

Del Guercio, Diane, 1996, The distorting effect of the prudent man law on institutional equity investments, *Journal of Financial Economics* 40, 31–62.

Dewenter, Kathryn L., Xi Han and Paul H. Malatesta, 2009, Firm value and sovereign wealth fund investments, Working Paper, University of Washington.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2008, The law and economics of self-dealing, *Journal of Financial Economics* 88, 430-465.

Doidge, Craig, G. Andrew Karolyi, and René Stulz, 2004, Why are foreign firms listed in the U.S. worth more?, *Journal of Financial Economics* 71, 205–238.

Doidge, Craig, G. Andrew Karolyi, Karl Lins, Darius Miller, and René Stulz, 2008a, Private benefits of control, ownership and the cross-listing decision, *Journal of Finance*, forthcoming.

Doidge, C., G. Andrew Karolyi, and René Stulz, 2008b, Has New York become less competitive in global markets? Evaluating foreign listing choices over time, *Journal of Financial Economics*, forthcoming.

Dyck, A., L. Zingales, 2004, Private benefits of control: an international comparison, *Journal of Finance* 59, 537-600.

Ferreira, Miguel and Pedro Matos, 2008, The colors of investors' money: the role of institutional investors around the world, *Journal of Financial Economics* 88, 499–533.

Financial Times Special Report, Sovereign wealth funds: the new kids around the block, January 24, 2008.

Fotak, V., B. Bortolotti, and W. Megginson, 2008, The financial impact of sovereign wealth fund investments in listed companies, working paper, University of Oklahoma.

Franks, Julian, and Colin Mayer, 2001, Ownership and control of German corporations, *Review of Financial Studies* 14, 943–977.

Gillan, Stuart, and Laura Starks, 2007, The evolution of shareholder investment in the United States, *Journal of Applied Corporate Finance* 19, 55-73.

Gompers, Paul, and Andrew Metrick, 2001, Institutional investors and equity prices, *Quarterly Journal of Economics* 116, 229–259.

Karpoff, Jonathan M., Paul H. Malatesta, and Ralph A. Walkling, 1996, Corporate governance and shareholder initiatives: Empirical evidence, *Journal of Financial Economics* 42, 365-395

Kotter, Jason, Ugur Lel, 2008, Friends or Foes? The Stock Price Impact of Sovereign Wealth Fund Investments and the Price of Keeping Secrets, working paper, Federal Reserve Board of Governors.

Lyons, Gerard, 2007, State capitalism: the rise of sovereign wealth funds, *Journal of Management Research* 7, Number 3, 119–146.

McConnell, John, and Henri Servaes, 1990, Additional evidence on equity ownership and corporate value, *Journal of Financial Economics* 27, 595–612.

Merton, Robert, 1987, A simple model of capital market equilibrium with incomplete information, *Journal of Finance* 43, 483–510.

Petersen, Mitchell, 2008, Estimating standard errors in finance panel data sets: Comparing approaches, *Review of Financial Studies*, forthcoming.

Shleifer, A. and R. Vishny, 1986, Large shareholders and corporate control, *Journal of Political Economy* 94, 461–488.

Summers, Lawrence, 2007, Sovereign wealth funds shake the logic of capitalism, *Financial Times,* July 30, 2007.

The Economist, 2008, Sovereign wealth funds: Asset-backed insecurity, January 17, 2008 (print edition).

Table I
Descriptive Statistics of Control Variables

This table presents descriptive statistics of firm- and country-level variables. ANTISELF is the anti-self-dealing index for the country from Djankov et al. 2008; GDP is the GDP per capita from the World Bank, used as a proxy for economic development; MCAP/GDP is the ratio of country market capitalization to GDP, a proxy for financial development computed using World Bank and Datastream data; TURNOVER_ct is the ratio of country value traded to GDP, a proxy for liquidity of financial markets, computed using World Bank and Datastream data. Q is Tobin's Q computed as book value of total assets plus the market value of equity minus the book value of equity divided by total assets; INDUSTRY Q is the median of the individual firm's Tobin Q in a certain industry-year (based on 2-digit SIC); Size is the log of total assets in USD; Leverage is the ratio of total debt to total assets; INVOP is investment opportunities, computed as the 2-year geometric sales growth; ROE is the return on equity; DY is the dividend yield; R&D is the ratio of R&D spending to total assets; CAPEX is the ratio of capital expenditures to total assets; Cash is the ratio of cash holdings to total assets; ADR is a dummy equal to one if the stock is cross-listed in U.S. exchanges, and zero otherwise; FX sales is the percentage of foreign sales; Analysts is the number of financial analysts following the firm; MSCI is a dummy variable equal to one if the firm is included in the MSCI index, and zero otherwise; Return is the return in the past year; TURNOVER is the trading volume divided by shares outstanding; IO percentage is the percentage of ownership by institutional investors. The sample period is from 2002 to 2007. All ratios are winsorized at the 1% and 99% levels.

	Source	Mean	Median	St. Dev	Observations
Country Level					
ANTISELF	Djankov et al. (2008)	0.62	0.65	0.20	161,023
GDP	WDI	9.88	10.45	1.17	154,210
MCAP/GDP	WDI and Datastream	115.87	106.53	84.10	160,707
TURNOVER_ct	WDI and Datastream	108.68	111.82	51.03	161,023
Firm Level					
Q	Worldscope	1.70	1.25	1.15	161,803
INDUSTRY Q	Worldscope	1.35	1.25	0.35	161,982
SIZE	Worldscope	12.39	12.21	2.11	161,925
LEVERAGE	Worldscope	0.23	0.18	0.25	161,604
INVOP	Worldscope	0.15	0.08	0.44	134,263
ROE	Worldscope	-0.11	7.92	51.57	153,028
DY	Worldscope	1.75	0.78	2.66	161,773
R&D	Worldscope	0.02	0.00	0.06	161,982
CAPEX	Worldscope	0.05	0.03	0.07	158,550
CASH	Worldscope	0.18	0.11	0.20	149,543
ADR	Hand-collected	0.27	0.00	0.45	161,982
FX Sales	Worldscope	13.94	0.00	26.69	161,982
Analysts	Worldscope	2.25	0.00	4.71	161,982
MSCI	MSCI	0.08	0.00	0.28	161,982
Return	Datastream	0.33	0.16	0.80	151,818
TURNOVER	Datastream	1.04	0.46	1.65	160,284
IO Percentage	LionShares	0.14	0.01	0.26	161,982

Table II
The World of Sovereign Wealth Funds

This table reports the main SWFs around the world and their size at the end of 2007 (in absolute terms, and relative to the country population, all in USD). The assets of each fund in billion USD are from the Sovereign Wealth Fund Institute, and GDP per capita in USD is from the World Bank and the U.S. Bureau of Labor and Statistics. The last column divides the total assets of the fund by the country (state) population. Population data is from the World Bank and the U.S. Bureau of Labor and Statistics.

Fund Name	Assets (Billions)	Inception	Origin	GDP per capita	Wealth in the Fund per capita
Abu Dhabi Investment Authority	875	1976	Oil	$42,501	$194,964
Norges Bank Investment Management	397	1990	Oil	$83,485	$84,995
Government of Singapore Investment Corporation	330	1981	Non-Commodity	$35,163	$71,911
SAFE Investment Company	312		Non-Commodity	$2,483	$236
Saudi Arabian Monetary Agency	300		Oil	$15,724	$12,351
Kuwait Investment Authority	250	1953	Oil	$33,687	$75,529
China Investment Corporation	200	2007	Non-Commodity	$2,483	$151
Hong Kong Monetary Authority	163	1998	Non-Commodity	$29,753	$23,409
National Welfare Fund	163	2008	Oil	$9,075	$1,144
Temasek Holdings	159	1974	Non-Commodity	$35,163	$34,648
Australian Future Fund	61	2004	Non-Commodity	$43,163	$2,897
Qatar Investment Authority	60	2000	Oil	$78,754	$64,516
Libyan Arab Foreign Investment Company	50	1981	Oil	$11,484	$8,212
Revenue Regulation Fund	47	2000	Oil	$3,903	$1,366
Alaska Permanent Fund	40	1976	Oil	$37,271	$59,403
National Pensions Reserve Fund	31	2001	Non-Commodity	$60,209	$7,098
Korea Investment Corporation	30	2005	Non-Commodity	$20,015	$619
Brunei Investment Agency	30	1983	Oil	$31,879	$77,922
Khazanah Nasional	26	1993	Non-Commodity	$6,956	$957
Kazakhstan National Fund	22	2000	Oil	$6,748	$1,384
Alberta's Heritage Fund	17	1976	Oil	$43,674	$505
New Mexico State Investment Office Trust	16	1958	Non-Commodity	$29,673	$8,185
Social and Economic Stabilization Fund	16	1985	Copper	$9,884	$935
National Stabilisation Fund	15	2000	Non-Commodity	$16,698	$653
New Zealand Superannuation Fund	14	2003	Non-commodity	$30,390	$3,259
Oil Stabilisation Fund	13	1999	Oil	$3,981	$180
Excess Crude Account	11	2004	Oil	$1,161	$76
Pula Fund	7	1966	Diamonds & Minerals	$7,933	$4,420
Public Investment Fund	5	2008	Oil	$15,724	$218
China-Africa Development Fund	5	2007	Non-Commodity	$2,483	$4
Permanent Wyoming Mineral Trust Fund	4	1974	Minerals	$40,676	$12
State Oil Fund	3	1999	Oil	$3,632	$384
Alabama Trust Fund	3	1986	Natural Gas	$31,295	$10
Timor-Leste Petroleum Fund	3	2005	Oil & Gas	$440	$2,882
Mumtalakat Holding Company	3	2006	Oil	$22,771	$3,403
State Capital Investment Corporation	2	2006	Non-Commodity	$829	$25
State General Reserve Fund	2	1980	Oil & Gas	$15,714	$778
RAK Investment Authority	1	2005	Oil	$42,501	$267
FIEM	1	1998	Oil	$8,282	$29
Heritage and Stabilization Fund	0.5	2000	Oil	$16,042	$354
Revenue Stabilisation Fund	0.4	1956	Phosphates	$686	$4,082
Poverty Action Fund	0.4	1998	Foreign Aid	$381	$11
National Fund for Hydrocarbon Reserves	0.3	2006	Oil, gas	$952	$101
Reserve Fund for Oil	0.2	2007	Oil	$3,756	$12

Table III
Equity Holdings of Sovereign Wealth Funds in The Sample

This table reports the equity holdings database used. The database is a combination of fund-provided information, 13Fs, LionShares, Thomson, SDC, Factiva, and Web searches. The table reports the total value of holdings in USD, the total number of holdings, and the average holding in the end of 2007. Three funds did not invest in equities during our sample period: Korea Investment Corporation (http://www.kic.go.kr/en/?mid=ki01), National Welfare Fund (Russia, http://www1.minfin.ru/), and Revenue Regulation Fund (Algeria, http://www.bank-of-algeria.dz/).

Fund Name	Fund Country	Total Value of Holdings	Total Number of Holdings	Average Holding
Abu Dhabi Investment Authority	UAE	$15,203,934,922	967	$15,722,787
Alaska Permanent Fund Corporation	USA	$561,819,424	113	$4,971,853
Brunei Investment Agency	Brunei	$1,318,210,703	58	$22,727,771
China Investment Corporation	China	$10,730,154,772	12	$894,179,564
Government of Singapore Investment Corporation	Singapore	$20,271,287,806	504	$40,220,809
Hong Kong Monetary Authority	Hong Kong	$604,705,729	142	$4,258,491
Khazanah Nasional	Malaysia	$18,368,721,832	23	$798,640,080
Korea Investment Corporation	South Korea	Does Not Invest in Equities during the period.		
Kuwait Investment Authority	Kuwait	$33,638,477,132	243	$138,429,947
Libyan Arab Foreign Investment Company	Libya	$594,834,516	7	$84,976,359
National Welfare Fund	Russia	Does Not Invest in Equities during the period.		
New Mexico State Investment Office Trust	USA	$42,294,248	17	$2,487,897
New Zealand Superannuation Fund	New Zeland	$4,766,147,498	3,086	$1,544,442
Norges Bank Investment Management	Norway	$150,483,378,244	7,029	$21,408,931
Qatar Investment Authority	Qatar	$4,169,335,315	12	$347,444,610
Revenue Regulation Fund	Algeria	Does Not Invest in Equities during the period.		
SAFE Investment Company	China	$1,311,487,644	85	$15,429,266
Saudi Arabian Monetary Agency	Saudi Arabia	$5,392,040,136	273	$19,751,063
Temasek Holdings	Singapore	$103,576,113,556	110	$941,601,032
Total		**$371,032,943,477**	**12,681**	**$29,258,966**

Table IV
Panel A: Sovereign Wealth Fund Holdings by Country

This table reports the total number of firms, as well as the number of firms held by SWFs in each country. The number of firms in each market is from Datastream. The data is from 2007.

Country	Total	Held by SWF	% of stocks
Argentina	79	1	1.27
Australia	1,885	260	13.79
Austria	97	34	35.05
Belgium	134	52	38.81
Bermuda	76	3	3.95
Brazil	342	97	28.36
Canada	1,538	254	16.51
Cayman Islands	19	1	5.26
China	1,896	112	5.91
Czech Republic	16	1	6.25
Denmark	165	42	25.45
Egypt	29	1	3.45
Finland	131	45	34.35
France	664	179	26.96
Germany	816	141	17.28
Greece	287	58	20.21
Hong Kong	1,008	247	24.50
Hungary	29	2	6.90
India	1,171	23	1.96
Indonesia	360	12	3.33
Ireland	74	29	39.19
Israel	172	7	4.07
Italy	292	138	47.26
Japan	4,032	1,386	34.38
Korea (South)	1,037	255	24.59
Luxembourg	39	8	20.51
Malaysia	1,013	55	5.43
Mexico	122	42	34.43
Morocco	12	1	8.33
Netherlands	180	69	38.33
New Zealand	154	22	14.29
Norway	195	1	0.51
Pakistan	116	2	1.72
Peru	89	1	1.12
Philippines	226	5	2.21
Portugal	48	18	37.50
Russian Federation	95	12	12.63
Singapore	632	108	17.09
South Africa	369	94	25.47
Spain	148	83	56.08
Sweden	349	95	27.22
Switzerland	261	112	42.91
Taiwan	1,244	366	29.42
Thailand	526	29	5.51
Turkey	229	8	3.49
United Kingdom	2,252	370	16.43
United States	7,782	2,240	28.78
Total	32,986	7,145	21.66

Panel B: Sovereign Wealth Fund Holdings by Industry

This table reports the total number of firms, as well as the number of firms held by SWFs in each industry. The data is from 2007.

Industry	Total	Held by SWF	% of stocks
Food/tobacco industry	1,435	273	19.02
Basic industry	4,894	642	13.12
Capital goods industry	2,985	811	27.17
Consumer durables industry	4,718	1,023	21.68
Construction industry	1,495	115	7.69
Finance/real estate industry	5,484	1,431	26.09
Leisure industry	1,333	311	23.33
Petroleum industry	1,061	216	20.36
Services industry	4,526	1,004	22.18
Textiles/trade industry	2,196	566	25.77
Transportation industry	911	271	29.75
Utilities industry	1,669	432	25.88
Other services	279	50	17.92
Total	32,986	7,145	21.66

Table V
Determinants of Sovereign Wealth Fund Holdings

The dependent variable is a dummy variable that equals 1 if the ownership stake of SWFs in the company is greater than 1%, and zero otherwise. All the other variables are defined in Table I. The data is from 2007. We present coefficient estimates from a probit regression. Robust standard errors corrected for heteroskedasticity and clustered at the country level are presented in parentheses. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively. Columns (5)-(7) include country fixed effects.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SIZE	0.1856**	0.1639**	0.1675**	0.1968**	0.2598**	0.1939**	0.1995**
	4.39	7.74	7.6	11.15	6.34	10.14	10.46
LEVERAGE	-0.3483**	-0.2486	-0.3034*	-0.3028*	-0.3782**	-0.2859*	-0.3416*
	3.39	1.87	2.05	1.97	3.16	2.24	2.37
INVOP	-0.03	-0.0462	-0.0435	-0.067	-0.0395	-0.0198	-0.0149
	0.51	0.85	0.77	1.15	0.57	0.32	0.24
ROE	0.0041**	0.0026	0.003	0.0029	0.0045*	0.0031	0.0036
	2.62	1.82	1.86	1.88	2.29	1.65	1.79
DY	0.0024	-0.011	-0.0078	-0.0186*	-0.0096	-0.0158	-0.0163
	0.26	1.15	0.77	2.02	0.82	1.35	1.28
R&D	-1.3364	-1.2714	-1.3387	-0.7279	0.2759	-0.7672	-0.7981
	0.9	1.33	1.34	0.79	0.22	0.61	0.62
CAPEX	0.1568	0.1206	0.1606	0.2425	1.1281**	0.7203**	0.7411**
	0.57	0.41	0.55	0.94	4.48	2.6	2.65
CASH	0.2027	0.2486	0.2182	0.2408	0.2731	0.1418	0.1335
	1.16	1.53	1.27	1.46	1.65	0.77	0.73
ADR		-0.8278**	-0.8814**	-0.9103**		-0.0792	-0.0865
		3.82	3.92	3.92		0.48	0.52
FX Sales		0.0008	0.001	0.0004		0.0005	0.0005
		1.05	1.26	0.66		0.71	0.67
Analysts		0.0280**	0.0268**	0.0245**		0.0304**	0.0288**
		4.24	4.25	4.35		4.34	4.5
MSCI		-0.0066	-0.0181	-0.052		-0.1456	-0.154
		0.04	0.12	0.35		0.9	0.93
IO DUMMY			0.3966**	0.4003**			0.4601**
			4.67	4.27			4.24
Return			-0.0318	-0.055			-0.0547
			0.71	1.4			1.28
TURNOVER			0.0428	0.0432			0.0376
			1.23	1.63			1.12
ANTISELF				0.7655**			
				3.69			
GDP				0.0189			
				0.34			
MCAP/GDP				-0.0003			
				0.98			
TURNOVER_ct				-0.0009			
				0.83			
Constant	-4.5279**	-4.4904**	-4.5851**	-5.4746**	-10.5562**	-9.4260**	-9.4868**
	8.87	19.15	18.47	11.79	18.15	35.15	38.5
Observations	20284	20284	20284	20284	19280	19280	19280
Pseudo-R2	0.14	0.15	0.15	0.15	0.15	0.15	0.18
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes

Table VI
Sovereign Wealth Fund Ownership and Firm Value

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of Tobin's Q. Panel A presents the results using a dummy variable for large equity investment by SWFs (SWF Dummy) that equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise. Panel B presents results using the percentage of ownership by SWFs (SWF Ownership) without any threshold restriction. The sample period is from 2002 to 2007. All variables are defined in Table I. All specifications use standard errors corrected for heteroskedasticity and clustered at the firm level. Absolute values of *t*-statistics are presented below the coefficients. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively. Columns (1)–(4) include year fixed effects. Columns (5)–(8) include country and year fixed effects. We restrict the sample to firms with a market capitalization above USD 10 million.

Panel A: SWF Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF DUMMY	0.3076**	0.3532**	0.3284**	0.3096**	0.4574**	0.3655**	0.3386**	0.3432**
	9.71	10	9.29	8.56	13.74	9.97	9.2	9.28
SIZE	-0.1699**	-0.1345**	-0.1423**	-0.1437**	-0.1836**	-0.1282**	-0.1365**	-0.1380**
	62.8	42.23	43.77	43.08	68.95	39.25	40.91	40.61
INDUSTRY Q	0.9293**	0.6600**	0.6400**	0.6580**	0.7926**	0.5993**	0.5830**	0.5940**
	49.04	33.23	32.27	32.59	43.97	31	30.24	30.1
INVOP		0.1950**	0.1954**	0.1764**		0.1567**	0.1566**	0.1499**
		21.44	21.49	19.28		17.29	17.31	16.35
LEVERAGE		0.4592**	0.4770**	0.4753**		0.4386**	0.4519**	0.4638**
		18.51	19.33	19.25		17.84	18.48	18.78
CASH		1.2017**	1.1794**	1.1979**		1.2718**	1.2452**	1.2351**
		34.28	33.79	33.53		36.2	35.57	34.48
ADR		0.4702**	0.4424**	0.4824**		0.3382**	0.3171**	0.3260**
		35.71	33.62	33.32		9.68	8.99	9.15
IO DUMMY			0.1189**	0.1484**			0.1297**	0.1134**
			13.21	15.58			14	11.94
ANTISELF				0.0935**				
				3.38				
GDP				-0.0829**				0.4456**
				14.97				11.61
MCAP/GDP				0				0.0023**
				0.25				17.84
TURNOVER_ct				0.0003**				-0.0005**
				3.38				5.42
Constant	2.4830**	1.8395**	1.9125**	2.5903**	2.4561**	1.5672**	1.6715**	-1.9710**
	54.01	37.88	39.07	34.01	31.71	21.7	22.74	6.13
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2273	0.2453	0.248	0.259	0.2925	0.2914	0.2943	0.2972
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Ownership Percentage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF OWNERSHIP	0.7905**	0.7876**	0.8261**	0.8052**	1.4053**	0.9948**	1.0099**	1.1651**
	3.83	3.58	3.88	3.49	4.9	4.07	4.17	5.11
SIZE	-0.1690**	-0.1330**	-0.1430**	-0.1448**	-0.1822**	-0.1269**	-0.1371**	-0.1407**
	62.63	41.86	44.4	43.6	68.48	38.9	41.46	41.6
INDUSTRY Q	0.9301**	0.6618**	0.6493**	0.6689**	0.7947**	0.6010**	0.5915**	0.5995**
	49.04	33.24	32.72	33.03	43.97	31	30.6	30.32
INVOP		0.1949**	0.1972**	0.1792**		0.1570**	0.1596**	0.1529**
		21.41	21.68	19.58		17.3	17.61	16.65
LEVERAGE		0.4587**	0.4763**	0.4744**		0.4383**	0.4520**	0.4661**
		18.46	19.27	19.17		17.8	18.45	18.87
CASH		1.2055**	1.1938**	1.2120**		1.2754**	1.2624**	1.2461**
		34.37	34.25	33.98		36.28	36.11	34.87
ADR		0.4664**	0.3796**	0.4137**		0.3427**	0.3181**	0.3232**
		35.4	25.91	26.5		9.82	9	9.03
IO Percentage			0.2718**	0.3031**			0.2487**	0.2603**
			12.79	14.07			11.51	11.97
ANTISELF				0.0683*				
				2.45				
GDP				-0.0767**				0.4901**
				14.07				12.73
MCAP/GDP				0				0.0025**
				0.52				18.96
TURNOVER_ct				0.0003**				-0.0005**
				2.83				5.54
Constant	2.4714**	1.8205**	1.9422**	2.5935**	2.4343**	1.5465**	1.6823**	-2.2978**
	53.83	37.53	39.71	34.22	31.49	21.43	23.05	7.15
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2267	0.2443	0.2475	0.2582	0.2914	0.2905	0.293	0.297
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table VII

Sovereign Wealth Fund Large Ownership and Firm Value: Robustness Checks

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of Tobin's Q. Panel A presents the results using a dummy variable for large equity investment by SWFs (SWF Dummy) that equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise. Panel B presents results using the percentage of ownership by SWFs (SWF Ownership) without any threshold restriction. All columns, except column (9), use data from 2002 through 2007. Column (1) includes all firms in our sample. Columns (3) and (4) include only firms with total assets above USD 10 million and 100 million, respectively. Columns (5) and (6) restrict the sample to firms with a market capitalization above USD 10 million and USD 100 million. Column (7) presents results of the estimation using only U.S. firms. Column (8) presents results of the estimation using only non-U.S. firms. Column (9) reports the regression coefficients using only 2007 holdings and firms. All the other variables are defined in Table I. All specifications (except for column (2), where country-clustered standard errors are used) use standard errors corrected for heteroskedasticity and clustered at the firm level. Absolute values of *t*-statistics are presented below the coefficients. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively. All regressions include country and year fixed effects.

Panel A: SWF Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	**All - Country clustered**	**assets > $10M**	**assets > $100M**	**Market Value > $10M**	**Market Value > $100M**	**US only**	**Non-US**	**2007**
SWF DUMMY	0.3525**	0.3525**	0.2344**	0.1815**	0.3432**	0.1849**	0.2957**	0.3070**	0.3508**
	9.44	4.44	6.32	4.93	9.28	5.23	2.97	8.42	7.14
SIZE	-0.1314**	-0.1314**	-0.0408**	0.0023	-0.1380**	-0.1904**	-0.1549**	-0.1168**	-0.1197**
	45.68	8.35	13.98	0.65	40.61	36.74	31.5	33.61	30.05
INDUSTRY Q	0.5986**	0.5986**	0.5634**	0.5860**	0.5940**	0.6029**	0.5766**	0.6771**	0.6806**
	31.19	18.42	30.13	26.39	30.1	24.16	13.2	31.84	25.5
INVOP	0.1283**	0.1283**	0.1612**	0.1589**	0.1499**	0.1544**	0.2266**	0.1063**	0.0795**
	15.71	2.98	18.56	14.59	16.35	12.3	14	11.51	5.08
LEVERAGE	0.7445**	0.7445**	0.2480**	-0.1031**	0.4638**	0.0287	0.7831**	0.6563**	0.6623**
	46.72	14.34	8.59	3.53	18.78	0.76	36.07	24.81	26.88
CASH	1.1995**	1.1995**	1.1870**	1.1593**	1.2351**	1.3255**	1.3153**	1.1262**	1.1898**
	37.55	15.28	33.44	24.55	34.48	27.37	23.98	28.99	23.87
ADR	0.3395**	0.3395**	0.1606**	0.0884**	0.3260**	0.2910**		0.3311**	0.2527**
	9.51	5.78	4.7	2.59	9.15	7.86		9.16	4.94
IO DUMMY	0.1706**	0.1706**	0.1696**	0.1235**	0.1134**	0.0225	0.1531**	0.2018**	0.0776**
	18.03	5.68	19.21	13.25	11.94	1.84	6.98	19.79	5.32
GDP	0.4206**	0.4206*	0.4136**	0.5017**	0.4456**	0.4770**		-0.0754**	0.033
	11.2	2.61	11.58	13.17	11.61	9.62		14.58	1.15
MCAP/GDP	0.0022**	0.0022	0.0021**	0.0021**	0.0023**	0.0027**		0.0002**	0.0006**
	17.35	1.68	17.38	16.93	17.84	13.86		2.94	4.25
TURNOVER_ct	-0.0007**	-0.0007	-0.0005**	0.0001	-0.0005**	0.0001		0.0007**	0.0019**
	8.1	1.08	5.91	1.64	5.42	0.68		7.38	3.62
Constant	-2.0507**	-2.0507	-2.8407**	-3.9363**	-1.9710**	-1.1538**	2.2096**	2.0941**	1.1820**
	6.55	1.46	9.53	12.15	6.13	2.77	9.54	31.09	4.3
Observations	135110	135110	122626	80435	117416	68212	33388	101722	23521
Adjusted R-squared	0.3224	0.3224	0.2313	0.2486	0.2972	0.3209	0.3364	0.1985	0.3103
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

Panel B: Ownership Percentage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	All - Country clustered	assets > $10M	assets > $100M	Market Value > $10M	Market Value > $100M	US only	Non-US	2007
SWF OWNERSHIP	1.2343**	1.2343**	0.6966**	0.4449**	1.1651**	0.6668**	0.7805**	0.7271**	1.2260**
	5.43	3.65	3.7	2.89	5.11	2.95	3.53	3.5	3.82
SIZE	-0.1331**	-0.1331**	-0.0434**	0.0021	-0.1407**	-0.1911**	-0.1848**	-0.1075**	-0.1176**
	46.52	5.81	15.02	0.61	41.6	37	35.34	31.51	29.56
INDUSTRY Q	0.6088**	0.6088**	0.5727**	0.5870**	0.5995**	0.6028**	0.5583**	0.6946**	0.6901**
	31.67	16.23	30.61	26.48	30.32	24.11	13.01	32.36	25.91
INVOP	0.1321**	0.1321**	0.1647**	0.1610**	0.1529**	0.1556**	0.2320**	0.1077**	0.0803**
	16.13	3.01	18.91	14.81	16.65	12.37	14.55	11.62	5.12
LEVERAGE	0.7450**	0.7450**	0.2471**	-0.0984**	0.4661**	0.0309	0.7589**	0.6454**	0.6651**
	46.63	14.32	8.56	3.38	18.87	0.82	35.66	24.23	26.85
CASH	1.2129**	1.2129**	1.2023**	1.1629**	1.2461**	1.3280**	1.2780**	1.1517**	1.2006**
	38.02	16.43	33.96	24.84	34.87	27.43	23.54	29.51	24.12
ADR	0.3407**	0.3407**	0.1548**	0.0689*	0.3232**	0.2829**		0.2737**	0.2553**
	9.52	4.47	4.53	2.02	9.03	7.6		7.54	4.99
IO Percentage	0.3448**	0.3448**	0.3662**	0.3120**	0.2603**	0.0973**	0.4158**	0.5104**	0.1215**
	15.86	7.94	17.65	14.93	11.97	4.25	13.76	15.74	4.38
GDP	0.4916**	0.4916**	0.4841**	0.5479**	0.4901**	0.4893**		-0.0681**	0.0372
	13.01	3.6	13.48	14.3	12.73	9.87		13.34	1.3
MCAP/GDP	0.0024**	0.0024	0.0023**	0.0023**	0.0025**	0.0027**		0.0002**	0.0006**
	19.02	1.85	19.21	18.47	18.96	14.12		2.86	4.46
TURNOVER_ct	-0.0007**	-0.0007	-0.0005**	0.0001	-0.0005**	0.0001		0.0007**	0.0019**
	8.03	1.05	5.93	1.62	5.54	0.6		7.12	3.75
Constant	-2.6082**	-2.6082*	-3.3782**	-4.2901**	-2.2978**	-1.2387**	2.3548**	1.9373**	1.1137**
	8.31	2.09	11.31	13.21	7.15	2.97	10.14	29.39	4.07
Observations	135110	135110	122626	80435	117416	68212	33388	101722	23521
Adjusted R-squared	0.3216	0.3216	0.2316	0.2516	0.297	0.321	0.351	0.1943	0.3089
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

Table VIII

Sovereign Wealth Fund Ownership and Firm Value (excluding Norway)

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of Tobin's Q after excluding the Norwegian SWF from the sample. Panel A presents the results using a dummy variable for large equity investment by SWFs (SWF Dummy) that equals one if the ownership stake held by other SWFs in the company is greater than 1%, and zero otherwise. Panel B presents results using the percentage of ownership by SWFs (SWF Ownership) without any threshold restriction. The sample period is from 2002 to 2007. All the other variables are defined in Table I. All specifications use standard errors corrected for heteroskedasticity and clustered at the firm level. Absolute values of *t*-statistics are presented below the coefficients. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively. Columns (1)–(4) include year fixed effects. Columns (5)–(8) include country and year fixed effects. We restrict the sample to firms with a market capitalization above USD 10 million.

Panel A: SWF Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF DUMMY	0.2390**	0.2429**	0.2214**	0.1510*	0.3968**	0.2322**	0.2000**	0.2145**
	4.79	4.14	3.8	2.54	7.42	3.83	3.3	3.52
SIZE	-0.1690**	-0.1330**	-0.1411**	-0.1424**	-0.1823**	-0.1268**	-0.1353**	-0.1368**
	62.63	41.86	43.47	42.74	68.57	38.88	40.61	40.31
INDUSTRY Q	0.9305**	0.6621**	0.6414**	0.6593**	0.7951**	0.6014**	0.5846**	0.5957**
	49.07	33.28	32.3	32.6	44.02	31.05	30.27	30.13
INVOP		0.1948**	0.1952**	0.1762**		0.1568**	0.1567**	0.1500**
		21.4	21.45	19.25		17.29	17.3	16.34
LEVERAGE		0.4587**	0.4769**	0.4754**		0.4384**	0.4520**	0.4639**
		18.46	19.3	19.23		17.8	18.46	18.76
CASH		1.2051**	1.1821**	1.2009**		1.2751**	1.2478**	1.2377**
		34.35	33.84	33.6		36.26	35.62	34.54
ADR		0.4668**	0.4386**	0.4779**		0.3436**	0.3217**	0.3306**
		35.45	33.32	32.99		9.85	9.13	9.29
IO DUMMY			0.1216**	0.1511**			0.1326**	0.1162**
			13.5	15.86			14.3	12.23
ANTISELF				0.0963**				
				3.47				
GDP				-0.0827**				0.4453**
				14.94				11.6
MCAP/GDP				0				0.0023**
				0.25				17.91
TURNOVER_ct				0.0003**				-0.0005**
				3.41				5.25
Constant	2.4714**	1.8204**	1.8963**	2.5692**	2.4350**	1.5442**	1.6519**	-1.9892**
	53.84	37.55	38.79	33.71	31.51	21.41	22.49	6.19
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2267	0.2443	0.2471	0.2582	0.2914	0.2904	0.2934	0.2962
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Ownership Percentage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF OWNERSHIP	0.3365*	0.3631	0.4269*	0.3597	0.8828**	0.5501**	0.5897**	0.7232**
	2.04	1.94	2.34	1.79	3.83	2.61	2.8	3.71
SIZE	-0.1687**	-0.1326**	-0.1427**	-0.1443**	-0.1817**	-0.1265**	-0.1366**	-0.1402**
	62.57	41.77	44.31	43.5	68.38	38.8	41.36	41.49
INDUSTRY Q	0.9303**	0.6619**	0.6495**	0.6690**	0.7954**	0.6013**	0.5919**	0.5999**
	49.05	33.24	32.72	33.04	43.99	31.01	30.61	30.33
INVOP		0.1949**	0.1971**	0.1791**		0.1569**	0.1596**	0.1528**
		21.4	21.67	19.56		17.29	17.6	16.64
LEVERAGE		0.4586**	0.4762**	0.4744**		0.4383**	0.4520**	0.4661**
		18.45	19.26	19.16		17.8	18.44	18.86
CASH		1.2063**	1.1946**	1.2129**		1.2762**	1.2632**	1.2470**
		34.39	34.26	34		36.29	36.13	34.89
ADR		0.4659**	0.3792**	0.4134**		0.3443**	0.3196**	0.3249**
		35.37	25.88	26.49		9.88	9.06	9.09
IO Percentage			0.2717**	0.3029**			0.2489**	0.2607**
			12.79	14.06			11.52	11.98
ANTISELF				0.0706*				
				2.53				
GDP				-0.0766**				0.4901**
				14.06				12.73
MCAP/GDP				0				0.0025**
				0.51				18.96
TURNOVER_ct				0.0003**				-0.0005**
				2.77				5.51
Constant	2.4677**	1.8158**	1.9375**	2.5868**	2.4267**	1.5396**	1.6757**	-2.3052**
	53.77	37.45	39.63	34.14	31.42	21.34	22.97	7.17
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2266	0.2441	0.2474	0.258	0.2911	0.2903	0.2928	0.2967
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IX

Sovereign Wealth Fund Ownership and Firm Value: The Role of Transparency

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of Tobin's Q. The estimations use the Linaburg–Maduell Transparency index to sort SWF holdings into two groups, based on the median transparency score. Panel A uses the SWF dummy for large positions by high- and low-transparency funds. Panel B uses the continuous variable of percentage holdings by high- and low-transparency funds. The sample period is from 2002 to 2007. All the other variables are defined in Table I. All specifications use standard errors corrected for heteroskedasticity and clustered at the firm level. Absolute values of *t*-statistics are presented below the coefficients. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively.

Panel A: SWF Dummy

	(1)	(2)	(3)
SWF DUMMY	0.3432**		
	9.28		
dummy_high		0.3114**	
		7.74	
dummy_low			0.2785**
			3.47
SIZE	-0.1380**	-0.1375**	-0.1365**
	40.61	40.46	40.25
INDUSTRY Q	0.5940**	0.5947**	0.5956**
	30.1	30.09	30.12
INVOP	0.1499**	0.1497**	0.1501**
	16.35	16.32	16.35
LEVERAGE	0.4638**	0.4642**	0.4638**
	18.78	18.79	18.76
CASH	1.2351**	1.2362**	1.2386**
	34.48	34.51	34.56
ADR	0.3260**	0.3305**	0.3315**
	9.15	9.27	9.33
IO DUMMY	0.1134**	0.1139**	0.1171**
	11.94	11.99	12.32
GDP	0.4456**	0.4471**	0.4468**
	11.61	11.65	11.65
MCAP/GDP	0.0023**	0.0023**	0.0024**
	17.84	17.84	17.95
TURNOVER_ct	-0.0005**	-0.0005**	-0.0005**
	5.42	5.35	5.21
Constant	-1.9710**	-1.9932**	-2.0065**
	6.13	6.2	6.24
Observations	117416	117416	117416
Adjusted R-squared	0.2972	0.2969	0.2961
Country Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Panel B: Ownership Percentage

	(1)	(2)	(3)
SWF OWNERSHIP	1.1651**		
	5.11		
Ownership_high		1.3162**	
		4.22	
Ownership_low			0.7370**
			3.66
SIZE	-0.1407**	-0.1405**	-0.1399**
	41.6	41.58	41.42
INDUSTRY Q	0.5995**	0.5997**	0.6001**
	30.32	30.33	30.34
INVOP	0.1529**	0.1528**	0.1528**
	16.65	16.65	16.64
LEVERAGE	0.4661**	0.4662**	0.4660**
	18.87	18.87	18.85
CASH	1.2461**	1.2469**	1.2474**
	34.87	34.89	34.9
ADR	0.3232**	0.3226**	0.3269**
	9.03	9.01	9.17
IO Percentage	0.2603**	0.2599**	0.2601**
	11.97	11.94	11.96
GDP	0.4901**	0.4904**	0.4903**
	12.73	12.74	12.73
MCAP/GDP	0.0025**	0.0025**	0.0025**
	18.96	18.94	18.99
TURNOVER_ct	-0.0005**	-0.0005**	-0.0005**
	5.54	5.53	5.49
Constant	-2.2978**	-2.3021**	-2.3110**
	7.15	7.16	7.19
Observations	117416	117416	117416
Adjusted R-squared	0.297	0.297	0.2966
Country Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes

Table X
Sovereign Wealth Funds: Their Impact on Firms' Operating Performance

This table compares the operating performance of target firms around an SWF investment, and the same measures for a country/industry/size matched control group. The profitability measures are ROE, ROA, and profit margin (EBITDA-to-Sales and EBITDA-to-Assets). The last column of each panel shows the *t*-statistics for the test of difference in changes in the before–after periods, between the target and control groups. Panel A displays values of changes in the respective measures from year $t - 1$ to year $t + 1$. Panel B displays values of changes in the respective measures from year $t - 1$ to year t + 3. Panel A displays values of changes in the respective measures from year $t - 3$ to year $t + 3$.

Panel A: Comparison between t= -1; +1

	Target			Control			T-stat
	Before	**After**	**Change**	**Before**	**After**	**Change**	**Difference Target Changes vs. Control Changes**
ROE	11.82	13.9	2.08	12.01	12.27	0.26	2.18
ROA	5.13	6.65	1.52	5.85	6.13	0.28	2.34
EBITDA/Sales	10.45	11.97	1.52	11.33	10.96	-0.37	1.98
EBITDA/Assets	16.11	18.98	2.87	18.55	18.89	0.34	1.85

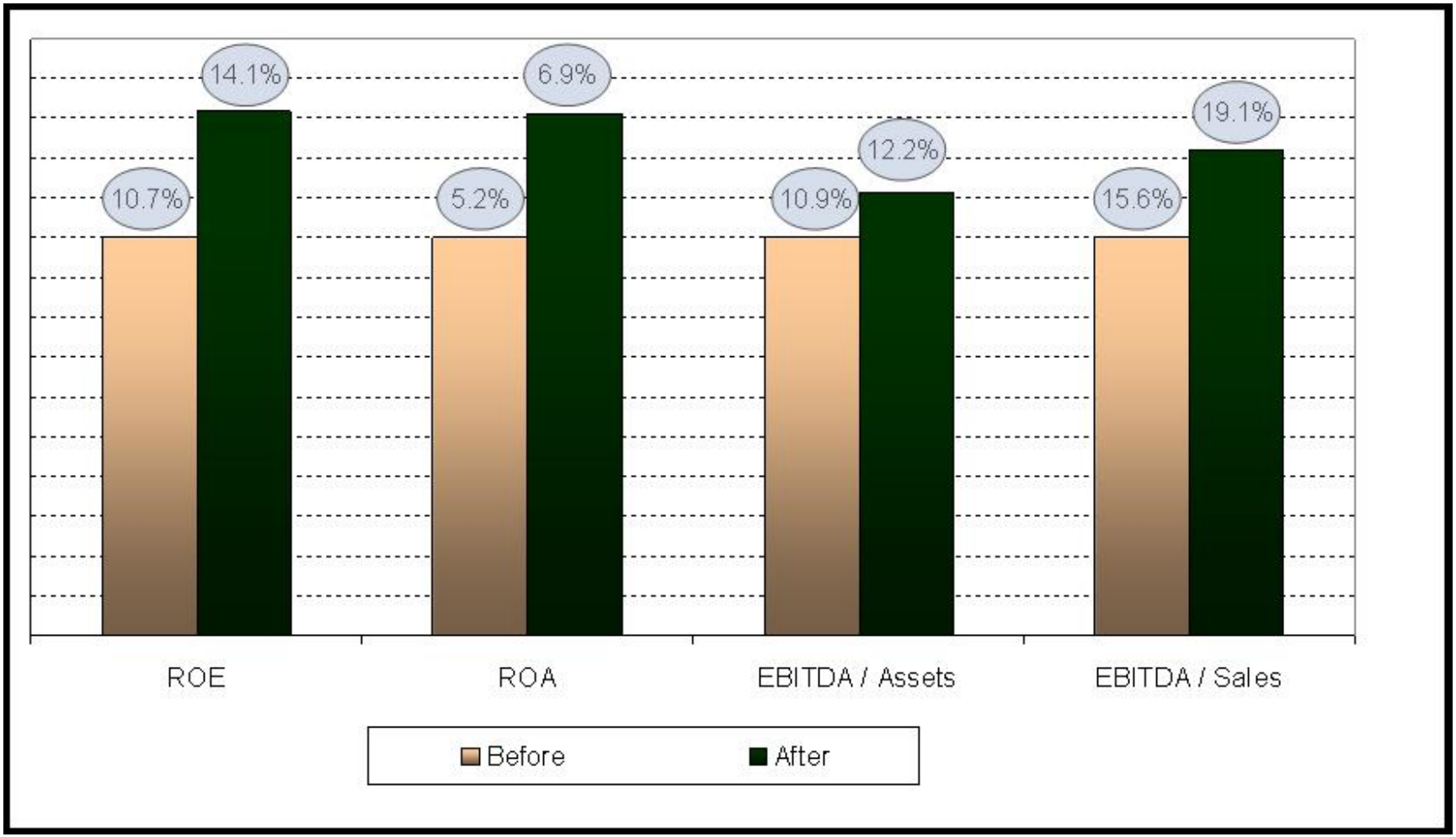
Panel B: Comparison between t= -1; +3

	Target			Control			T-stat
	Before	**After**	**Change**	**Before**	**After**	**Change**	**Difference Target Changes vs. Control Changes**
ROE	11.82	14.14	2.32	12.01	11.75	-0.26	2.19
ROA	5.13	6.93	1.8	5.85	5.95	0.1	2.93
EBITDA/Sales	10.45	12.2	1.75	11.33	10.71	-0.62	2.46
EBITDA/Assets	16.11	19.12	3.01	17.55	17.99	0.44	2.43

Panel C: Comparison between t= -3; +3

	Target			Control			T-stat
	Before	**After**	**Change**	**Before**	**After**	**Change**	**Difference Target Changes vs. Control Changes**
ROE	10.73	14.14	3.41	10.61	11.75	1.14	4.16
ROA	5.28	6.93	1.65	5.82	5.95	0.13	4.99
EBITDA/Sales	10.95	12.2	1.25	10.52	10.71	0.19	2.36
EBITDA/Assets	15.66	19.12	3.46	16.74	17.19	0.45	3.14

Figure 1 – Sovereign wealth funds: Their ownership and operational performance.
This figure contains different measures of operational performance. ROA is return on assets, ROE is the return on equity, and operating profit margins (defined as EBITDA/sales and EBITDA/assets). The year of the SWF investment is excluded. The analysis is based on the period 3 years before and after a large SWF investment in a firm.



Appendix 1
Sovereign Wealth Fund Ownership and Firm Value

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of the Log Tobin's Q. Panel A presents the results using a dummy variable for large equity investment by SWFs (SWF Dummy) that equals one if the ownership stake held by SWFs in the company is greater than 1%, and zero otherwise. Panel B presents results using the percentage of ownership by SWFs (SWF Ownership) without any threshold restriction. The sample period is from 2002 to 2007. All variables are defined in Table I. All specifications use standard errors corrected for heteroskedasticity and clustered at the firm level. Absolute values of *t*-statistics are presented below the coefficients. ** and * denote that a coefficient is significant at the 1% and 5% levels, respectively. Columns (1)–(4) include year fixed effects. Columns (5)–(8) include country and year fixed effects. We restrict the sample to firms with a market capitalization above USD 10 million.

Panel A: SWF dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF DUMMY	0.1552**	0.1886**	0.1706**	0.1614**	0.2272**	0.1955**	0.1775**	0.1786**
	9.65	10.28	9.31	8.58	13.29	10.14	9.18	9.18
SIZE	-0.0653**	-0.0513**	-0.0570**	-0.0573**	-0.0708**	-0.0461**	-0.0516**	-0.0519**
	52.84	34.58	37.55	36.76	59.67	30.75	33.6	33.31
INDUSTRY Q	0.4880**	0.3783**	0.3638**	0.3726**	0.4183**	0.3426**	0.3317**	0.3379**
	51.14	37.47	36.31	36.63	46.79	35.64	34.78	34.68
INVOP		0.1068**	0.1071**	0.0976**		0.0850**	0.0850**	0.0809**
		25.43	25.51	23.23		20.48	20.52	19.3
LEVERAGE		0.2325**	0.2453**	0.2435**		0.2186**	0.2275**	0.2343**
		21.95	23.33	23.25		21.1	22.14	22.64
CASH		0.5217**	0.5056**	0.5144**		0.5655**	0.5477**	0.5392**
		31.46	30.66	30.64		34.5	33.58	32.41
ADR		0.2502**	0.2301**	0.2481**		0.1471**	0.1330**	0.1350**
		39.43	36.21	34.26		8.03	7.17	7.3
IO DUMMY			0.0859**	0.1024**			0.0864**	0.0778**
			17.84	20.13			17.47	15.4
ANTISELF				0.0766**				
				5.05				
GDP				-0.0413**				0.1294**
				13.95				6.67
MCAP/GDP				-0.0001**				0.0014**
				3.04				20.2
TURNOVER_ct				0.0002**				-0.0002**
				4.16				3.56
Constant	0.4479**	0.1511**	0.2038**	0.5216**	0.3933**	-0.0274	0.042	-1.0292**
	20.17	6.37	8.55	13.23	7.94	0.55	0.83	6.2
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2048	0.2299	0.2354	0.2476	0.2919	0.2996	0.3046	0.3092
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Ownership Percentage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SWF OWNERSHIP	0.4140**	0.4437**	0.4707**	0.4659**	0.7062**	0.5609**	0.5710**	0.6364**
	3.67	3.51	3.85	3.55	4.98	4.3	4.43	4.96
SIZE	-0.0648**	-0.0505**	-0.0576**	-0.0582**	-0.0701**	-0.0454**	-0.0522**	-0.0536**
	52.59	34.09	37.6	36.74	59.09	30.32	33.6	33.86
INDUSTRY Q	0.4884**	0.3792**	0.3705**	0.3800**	0.4193**	0.3434**	0.3371**	0.3417**
	51.14	37.48	36.86	37.15	46.78	35.63	35.17	34.93
INVOP		0.1068**	0.1084**	0.0995**		0.0852**	0.0870**	0.0828**
		25.4	25.83	23.69		20.49	20.96	19.73
LEVERAGE		0.2322**	0.2446**	0.2427**		0.2185**	0.2276**	0.2356**
		21.9	23.28	23.16		21.06	22.13	22.78
CASH		0.5237**	0.5155**	0.5237**		0.5673**	0.5586**	0.5466**
		31.55	31.31	31.24		34.58	34.28	32.92
ADR		0.2482**	0.1873**	0.2026**		0.1494**	0.1329**	0.1331**
		39.1	26.41	25.99		8.16	7.16	7.18
IO Percentage			0.1906**	0.2052**			0.1662**	0.1713**
			18.37	19.57			15.87	16.28
ANTISELF				0.0591**				
				3.85				
GDP				-0.0370**				0.1591**
				12.74				8.16
MCAP/GDP				-0.0001**				0.0015**
				2.69				21.58
TURNOVER_ct				0.0002**				-0.0002**
				3.5				3.75
Constant	0.4421**	0.1411**	0.2265**	0.5246**	0.3826**	-0.0382	0.0526	-1.2463**
	19.93	5.95	9.37	13.29	7.73	0.76	1.03	7.5
Observations	161803	123158	123158	117416	161803	123158	123158	117416
Adjusted R-squared	0.2042	0.2288	0.235	0.2465	0.2907	0.2985	0.303	0.3091
Country Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes