

**Overcoming Information Asymmetry in Internationalization:
The Signaling Effect of a Sovereign Wealth Fund as an Institutional Intermediary**

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Abstract

Combining perspectives from the literature on institutional activism and signaling theory, we suggest that a sovereign wealth fund (SWF), owing to its distinctive properties as a government-owned foreign institutional investor, serves as an intermediary signaler, providing cues about host countries' institutional environment to internationalizing firms. By publicizing its investments and engaging in institutional activism aimed at host countries' corporate governance practices, a SWF signals the institutional quality of host countries, which allows firms to overcome the well-known 'lemons' problem in international decision-making. We examine the impact of a SWF's signals on firms' ownership choices in their foreign acquisitions. Empirical analysis of Norway's SWF and firms from Norway and Sweden during 1998-2011 shows that firms are more likely to take full equity ownership—indicative of larger commitments—in acquisitions in host countries where Norway's SWF holds larger investments. The signaling effect of the SWF weakens for co-national firms, suggesting a diminishing signal value with proximity to the signaler due to alternative information channels. Similarly, institutional harmonization between the home and host countries enabled by inter-governmental organizations weakens the signaling value of SWF investments. Our findings point to a new intermediary signaler and the salience of its signals for firms' international decision-making.

Key words: signaling theory, intermediary signaler, information asymmetry, institutional activism, business-government ties, inter-governmental organizations, international acquisitions, sovereign wealth funds (SWFs)

National governments have been traditionally viewed as immobile actors whose sphere of influence is largely confined to the boundaries of their juristic control (e.g. Weber, 1968; Skocpol, 1985; Spencer, Murtha, & Lenway, 2005; García-Canal & Guillén, 2008). In recent years, the locus of influence of some national governments has expanded beyond such traditional roles. Endowed with large amounts of financial reserves generated from natural resources and trade surpluses, national governments in countries like Norway, Singapore, China and the United Arab Emirates have become significant foreign institutional investors in the global economy via specific vehicles known as sovereign wealth funds (SWFs) (Lyons, 2008; Kotter & Lel, 2008; Aizenman & Glick, 2009; Backer, 2010; Inoue, Lazzarini & Musacchio, 2013). In 2015, the combined assets under the management of the 73 SWFs in existence accounted for about \$6.31 trillion, more than double the size of assets held by hedge funds and private equity funds combined (Sovereign Wealth Fund Institute, 2016).

As large foreign institutional investors, SWFs serve as intermediaries that can transfer to host countries a variety of environmental, social and corporate governance (ESG) practices that are aligned with their national values (Gillan & Starks, 2003; Sanders and Boivie, 2004; Connelly, Tihanyi, Certo & Hitt, 2010; Aggarwal, Erel, Ferreira & Matos, 2011). Although SWFs have emerged as important global players (Sauvant, Sachs & Jongbloed, 2012; UNCTAD, 2016), there has been little theoretical development and empirical insight concerning the strategic implications of their foreign investments (Backer, 2010; Bower, Leonard & Paine, 2011). In light of such anticipated effects, we examine whether SWF investments generate signals about host countries' institutional quality for internationalizing firms.

Our inquiry is underpinned by the important insight concerning the signaling value of intermediaries to observers seeking to overcome the 'lemons problem' in their transactions

(Akerlof, 1970; Spence, 1973). As Akerlof (1970: 499) observed, when information asymmetry affects market transactions, “numerous institutions arise to counteract the effects of quality uncertainty.” The signaling value of a third-party intermediary rests on the belief that it is more knowledgeable about the entity of interest than the observing audience, or because it holds the capacity to activate certain desired qualities in that entity (Pollock & Gulati, 2007; Stuart, Hoang & Hybels, 1999; Reuer & Ragozzino, 2014).

Building on these key insights, our signaling theory of SWFs as intermediaries emerges from several notable features pertaining to their government-ownership, access to information, and institutional activism that distinguish SWFs from not only other types of external referents such as firms and individuals (Connelly, Certo, Ireland & Reutzel, 2011), but also other types of activist investors such as pension funds. Based on these distinguishing features, we suggest that the size of a SWF’s investments and the associated costs of its activism serve as a visible and credible signal of institutional quality of host countries to observing internationalizing firms. Although SWFs do not pursue a uniform set of institutional values, they can serve as intermediary signalers for firms that prioritize the same institutional qualities that drive a SWF’s investments.

We examine the signaling impact of SWF investments on one major strategic choice that internationalizing firms undertake—the level of equity ownership in foreign acquisition targets. With most cross-border activities taking place via acquisitions (UNCTAD, 2015), the level of equity ownership in foreign targets represents an important strategic choice. Prior research has interpreted firms’ equity ownership as a response to perceived institutional uncertainty and information asymmetry, making this choice prone to signaling effects (Eden & Miller, 2004; Zhao, Luo & Suh, 2004; Tihanyi, Griffith & Russell, 2005; Brouthers & Hennart, 2007).

We test our hypotheses on all foreign equity investments undertaken by firms from Norway and Sweden in 47 countries globally during the period 1998-2011, in relation to the value of foreign investments by Norway's SWF in the same host countries. Our empirical setting includes firms that invest in countries where Norway's SWF has invested as well as firms that invest in countries where the SWF has not invested. Firms from Norway and Sweden share common institutional traits on several dimensions (Hall & Soskice, 2001; Jepperson, 2002), and are therefore, likely to prioritize similar institutional values in their foreign investments. Such a comparison of firms from Norway and Sweden allows for distinguishing the signaling effects of Norway's SWF from potential information flows between the Norwegian government investor and its co-national firms.

The foreign investments of Norway's SWF provide an appropriate context for our empirical analysis. Norway's SWF is among the world's largest and most transparent SWFs, with assets under management worth US\$885 billion in 2016. It accounts on average, for 1% of all listed equities globally and approximately 1.85% of all European equity holdings. Notably, Norway's SWF has proclaimed 'standard setting' by way of improved disclosure and practice development on a variety of ESG topics as a cornerstone of its investment principles. The scope and size of such investments have drawn the attention of audiences globally, enhancing the potential for signaling (Backer, 2010).

After accounting for selection issues involving firms' choices to invest in a particular host country, we find that firms from both Norway and Sweden are more likely to acquire full (wholly-owned) rather than partial equity stakes in targets in those host countries where Norway's SWF holds larger investments. While firms from both Norway and Sweden respond positively to Norway's SWF investments, this effect is weaker for co-national firms from

Norway. We interpret this diminished signaling value for co-national firms a result of access to direct information about host countries' institutional quality from their government investor. Similarly, the presence of inter-governmental organizations (IGOs) between home and host countries that create alternative channels for information flows and signal institutional harmonization (Alcacer & Ingram, 2013; Jandhyala & Phene, 2015), reduces the signaling value of the SWF's investments.

Our study allows us to extend theoretical developments in signaling theory in at least three ways. First, our study draws attention to SWF investors as intermediary signalers whose investments serve as credible signals of a host country's institutional quality to internationalizing firms. Importantly, SWF investments function as 'activating signals' that portend desirable institutional changes in host countries to observing firms. Second, the broad scope of SWFs as third-party intermediary signalers point to the impact of unintentional signals, which contrasts with deliberate two-party signaling between a signaler and a receiver (Janney & Folta, 2003; Connelly et al., 2011). Third, we explicate the boundaries of signaling by identifying two important contingencies related to alternative channels of information that reduce information asymmetry and the need for signaling: proximity to the sender and the signaling environment. While in our study proximity to the sender is defined in terms of co-nationality, proximity as a condition that determines the flow of information between senders and receivers, reducing the need for signaling, holds much broader validity. Similarly, IGO linkages demonstrate the salience of the signaling environment and the reduced reliance on intermediary signalers in the presence of direct signals of quality from the entity of interest.

THEORY AND HYPOTHESES

Classical signaling theory refers to two parties--the sender of a signal (the signaler which is the entity of interest and possesses the information) and the receiver (the audience to whom this information is not otherwise observable but perceived as useful) (Spence, 1973, 2002).

Theoretical developments based on this conceptualization focus on the mechanisms whereby the sender conveys to the receiver indicators about its qualities in the absence of direct information flows (Sanders and Boivie, 2004; Connelly, et al., 2011).

The characteristics of both the signaler and the receiver are germane to this signaling process. The signaler must be able to undertake costly actions to generate signals that allow the receiver to distinguish low quality candidates from high quality candidates (Certo, 2003; Gulati & Higgins, 2003). Moreover, the signaler's status and identity determine the credibility of its signal (Cohen & Dean, 2005). Finally, the coverage the signaler receives in public arenas determines its visibility for the receiver, and the likelihood that the receiver will pay attention to its signals and act upon them (Hoffman & Ocasio, 2001; Pollock & Rindova, 2003).

A variant of this classical signaling theory theorizes about situations whereby the entity of interest (most typically a firm) forms relational ties with the intention of signaling its quality to an observing audience. Studies in this stream of research identify a variety of such ties with lawyers, board members, stock brokers, financial investors and the like whose association with a firm signals accreditation to market participants about the firm's otherwise unobservable qualities (Certo, 2003; Gulati & Higgins, 2003; Sanders & Boivie, 2004; Higgins & Gulati, 2006; Reuer, Tong & Wu, 2012). The presence of outside directors on the board for instance, could be interpreted as a signal of good corporate governance that distinguishes a focal firm from its competitors (Certo, Daily & Dalton, 2001).

Our theorization builds on these precedents to develop a signaling theory of a third-party intermediary whose actions in relation to the entity of interest serve as a signal of this entity's qualities to observers. Intermediary signaling differs from the classical two-party and relational ties models along four main constructs. First, an intermediary signaler's association with the entity of interest is characterized by the actions it undertakes towards this entity rather than simply from the presence of a relational tie to it. Second, the intermediary's actions generate 'activating signals' and set in motion the expectation of certain qualities in the entity of interest (Connelly et al., 2011). An intermediary signaler may not possess full information about the entity of interest, and the credibility of its signal thus rests on the receivers' perception that the intermediary possesses information about the entity that they do not have. Third, whereas in the classical signaling theory and relational ties perspective the signaling act is driven by a deliberate intention to influence the perception of an observing audience, the actions of a third-party intermediary signaler are motivated by its own objectives rather than to explicitly change the behavior of an observing audience. The unintentionality of the signal implies that intermediaries could generate signals for a broad set of receivers. Fourth, unlike direct signalers that could have incentives to distort information about themselves, intermediaries are less inclined to send false signals, making their signals more trustworthy. Table 1 summarizes these distinguishing features of intermediary signaling that underpin our theoretical development.

In the hypotheses that follow, we develop our arguments concerning the signaling effect of SWF investments as third-party institutional intermediaries in relation to one important strategic decision of internationalizing firms—their foreign ownership choice. There is general agreement in the literature that once a firm has decided to enter a particular host country, it chooses the level of equity ownership in response to its evaluation of the host country's

institutional quality. Lower levels of equity ownership reduce a firm's exposure to adverse corporate governance practices in a host country and diminish the costs of exit should the investment climate turn unfavorable (Delios & Henisz, 2000). Conversely, larger equity ownership stakes indicate higher commitments and lower levels of perceived institutional risk in a host country (e.g. Yiu & Makino, 2002; Brouthers, 2002; Tihanyi et al., 2005). Accordingly, full ownership levels or wholly owned subsidiaries are often chosen when firms "are willing to make maximum commitment and take on maximum risk" (Brouthers & Hennart, 2007: 397).

Insert Table 1 about here

SWF Investments as Signals of Host Countries' Institutional Quality

Most SWFs aim to achieve national economic development goals by fostering resource diversification, macro-stabilization and intergenerational balance, all of which necessitate a long term investment horizon (Kotter & Lel, 2008; Aizenman & Glick, 2009; Backer, 2010).

Governments may also utilize their SWFs to pursue strategic goals such as the acquisition of natural resources and technological knowledge, which also call for long-term relationships with foreign companies and host governments (Aguilera, Capapé & Santiso, 2016). SWFs are predisposed to weather short-term stock market and financial volatilities because unlike other pension funds, they have no liabilities to be paid to policyholders and shareholders (Aisenman & Glick, 2009). Yet, their fiduciary responsibility for securing national long-term interests propels them towards incurring significant costs in conducting thorough due diligence and continually monitoring the institutional environments of the host countries in which they invest. Towards this end, SWFs have developed in-house capabilities comprising highly specialized teams of professionals examining new asset classes and geographies, and have set up offices

internationally, staffed by local talent to better monitor and evaluate the institutional quality of host countries (Aguilera et al., 2016).

A distinctive aspect of this due diligence process stems from a SWF's access to information about host countries through government channels that may not be easily available to firms or private investors. This type of information can be especially valuable for screening countries, so as to increase the likelihood of including 'good' countries, while reducing exposure to 'bad' countries in the investment portfolio. In this regard, Dewenter et al. (2010: 257) noted that: "If information flows freely between agencies of a government, then SWF managers would know about changes in government actions or regulations that affect firm values before their private sector investment management counterparts. This would enable SWFs to buy before good news and to sell before bad news is available to private investors." The perceived integrity of the information that originates from government agencies enhances the credibility of a SWF's investment size as an honest signal of the host country's institutional quality.

Further, larger investments increases the SWF's incentives for exercising influence over a host country and its target firms' employment, technology and product mixes (Shleifer & Vishny, 1986; Gillan & Starks, 1998; Dewenter et al., 2010; Aggarwal et al., 2011; Starks & Wei, 2013). SWF investments therefore, serve as 'activating signals' (Connelly et al., 2011) that portend changes to host countries' institutional qualities. Engaging in such activism through insider ownership entails significant costs for the signaler (Sanders & Boivie, 2004). A SWF's willingness to absorb the costs of activism increases the credibility of its signals.

As an institutional investor committing a large proportion of its national assets to a host country, a SWF utilizes a variety of monitoring and shareholder activism tactics including the threat of exit, to follow through with its stated policies and objectives (Tihanyi, Johnson,

Hoskisson & Hitt, 2003; Westphal & Bednar, 2008; Connelly et al., 2010; McCahery, Sautner & Starks, 2016). The policies and practices that result from such activism tactics often diffuse beyond the activists' direct targets to non-target firms that encounter competitive or legitimacy pressures for conformity (Briscoe & Safford, 2008). Because such diffusion takes time to unfold, a SWF's influence over a host country's policies will likely become observable and codifiable only after some time has elapsed following the investment. Yet, larger SWF investments are suggestive of encompassing ties to a wide range of firms and a pronounced influence in the host country that spreads beyond the SWF's target firms.

In addition to these influences over target firms, SWFs may engage with national stock exchanges, regulatory agencies and investor associations to shape institutional practices at the country-level (Dimson, Karakaş & Li, 2015). Relying on their status as government entities, they are able to lobby host country governments and influence policy-making. In particular, by anchoring institutional reforms to globally accepted principles of multilateral organizations such as the United Nations Principles for Responsible Investments, a SWF's activities are likely to gain further visibility and legitimacy, and attract attention from a broad set of firms internationally (McCahery et al., 2016; Dimson et al., 2015).

For instance, consequent to the recommendations made by Norway's SWF, the Hong-Kong stock exchange introduced rules requiring firms in the mining industry to report their environmental, health and safety records. In Brazil, similar acts led to the introduction of rules enforcing the separation of the CEO and chairman positions by the Brazilian stock exchange. In the U.K., the SWF's efforts led to the revision of the corporate governance code, requiring directors to be re-elected annually rather than every three years. Likewise, the SWF voted against the corporate governance practice of combining the roles of the chief executive and chairman in

U.S. banks and extended such claims to other industries¹. Notably, since 2009, Norway's SWF has contributed to a broad spectrum of nearly 50 ESG initiatives, globally (Table 2).

Such activism by a SWF in the ESG domain provides a substantive indicator of institutional differences that persist even among developed countries and among countries within the same regional and economic country groups (Khanna, Kogan & Palepu, 2006). The absence of explicit regulatory requirements for reporting corporate governance practices (OECD, 2017) makes such aspects of a host country's institutional environment largely unobservable for internationalizing firms, necessitating a reliance on signals (Gillan & Starks, 1998; Starks & Wei, 2013; Amel-Zadeh & Serafeim, 2017).

It follows from these arguments that the size of a SWF's investments in a host country generates a signal that is both costly to produce and visible to observing audiences which allows observing firms to distinguish between host countries in terms of their institutional quality when devising their foreign ownership strategies.

H1: Larger investments by a sovereign wealth fund in a host country will increase the likelihood of full rather than partial acquisitions in that host country by observing firms.

Moderating Effects

Signaling theory is based on the premise that signaling is employed to mitigate information asymmetry (Spence, 1973), thus implying that as information becomes more abundant and information asymmetry is reduced, reliance on signaling will diminish. Below we advance hypotheses regarding the potential effect of two sources of information flows on the impact of SWF signaling for internationalizing firms.

¹<http://www.ft.com/cms/s/0/1e34f5fe-cc1e-11e5-84df-70594b99fc47.html#axzz4DIAK4JI3>

Proximity to the Signaler: Co-national Ties. A sociocognitive view of firms' behavior suggests that institutional affinity between the parties to the signaling process enhances the receivers' attention to and interpretation of the signal (Hoffman & Ocasio, 2001; Burr, 2003). The relationship between the receiver and signaler determine the channels of communication and interactions between them and alters the receiver's attention to the signaler's activities.

Applying these insights to the context of our study, we suggest that while the institutionalized connection between a national government and its home country's firms amplifies the salience of the SWF's investments for these co-national firms' decision-making, such connections also create alternative avenues for information flows, thereby reducing their reliance on the SWF's signals.

Information transfers between a national government and home country firms can occur through a variety of mechanisms. In particular, as a government entity, a SWF is likely to willingly and in some cases intentionally share the information it holds with co-national firms to help them make better decisions about host countries. As Connelly et al. (2011) observed, proximity to a signaler who is an insider can reveal important details about not only the positive, but also the negative attributes of a product or organization. Moreover, government entities such as diplomatic missions and trade promotion bodies can provide similar information to home country firms and thereby aid these firms' decision-making about a host country's institutional conditions. These alternative avenues for private information flows available to co-national firms could make redundant some of the public information contained in the SWF's investment signal.

Our fieldwork and interviews with managers of companies in Norway revealed that even in the absence of deliberate information flows, routine interactions with government agencies occur through professional networks, industry associations, conferences, and stakeholder

dialogues. Such interactions serve to communicate important insights about the government's foreign investments and reinforce the investment principles guiding the SWF's actions. One such formal network in Norway, known as the KOMpakt involves participants from the government, academia and industry, and serves as the Norwegian government's consultative body on matters related to responsible investments globally. In addition to these formal mechanisms, social networks formed by professionals such as portfolio analysts and ESG experts who move between the SWF and firms become conduits of information flows between business and government (Vasudeva, 2013). Such linkages formed by the inter-penetration of business and government are particularly likely in Norway's social-corporatist institutional environment. As Jepperson (2002:73) observes, in such polities, characterized by a welfare orientation and the absence of a demarcation between the state and society, "...government is envisioned as intermediating the organized interests of society (Olsen 1983)."

In sum, the processes that determine whether a particular referent's signals contain useful information are determined not only by the institutional affinity between the sender and receiver, and the associated potential for cross-utilization of information, but also the intensity of alternative communication channels, which are likely stronger between constituents of the same nationality. These observations suggest that by virtue of proximity to the SWF signaler, the strength of its investment signal would diminish for co-national firms.

H2: The positive effect of larger investments by a sovereign wealth fund in a host country on the likelihood of full rather than partial acquisitions is weaker for co-national firms compared to other observing firms.

Signaling Environment: Home-Host Country IGO Ties. A central idea that underpins our signaling theory of SWF investors as intermediary signalers is that institutional differences across countries create information asymmetries and uncertainties for internationalizing firms

that trigger a reliance on signals. The signaling environment characterized by the extent of informational asymmetry and the availability of different types of signals thus, presents an important contingency in determining the extent to which firms rely on an intermediary's signals.

To understand this contingent role of the signaling environment, we focus on one multilateral mechanism known as inter-governmental organizations (IGOs) that serve as formal supranational institutions formed by an international treaty comprising at least three member governments (Pevehouse, Nordstrom & Warnke, 2004). IGOs bind member countries within a common framework of norms, rules and expectations that shape these countries' social, economic and political institutions. Consequently, IGO membership signals a host country's intent to align its institutions with a multilateral system of economic exchange. Such a signal can be especially powerful because it represents a deliberate action emerging directly from the host country that entails the costs of joining and maintaining membership in an IGO. Joint membership in IGOs therefore, reflects countries' commitment to shared values and principles.

IGOs channel the commonly agreed upon policies and practices through many avenues including conferences and meetings that enable interactions among civil servants, private sector participants and non-governmental organizations representing member countries (Jhandyala & Phene, 2015). Such interactions via diplomatic, political and trade missions enable the cross-national transfer of knowledge, goods and labor (Oneal & Russett, 1999), which in turn inculcate trust and shared principles among member countries. As a result of such efforts, IGOs such as the Organization of American States and the Asia-Pacific Economic Cooperation have prioritized the diffusion of anti-corruption practices (Sandholtz & Gray, 2003), and others such as the Organization for Economic Cooperation and Development have promoted corporate governance standards among member countries (Dimson et al., 2015).

Accordingly, joint IGO membership serves as a signal of institutional harmonization that promotes trade and investment flows between countries (Ingram, Robinson & Busch, 2005; Rangan & Sengul, 2009; Alcacer & Ingram, 2013). As Connelly et al. (2011: 56) observe, it is likely that “the value of signals diminishes as the number of signals increases.” It follows that while a SWF’s investments signal a host country’s institutional attractiveness, the reliance on such an intermediary signaler to make inferences about a host country’s institutional quality will likely reduce in the presence of a more direct and deliberate signal such as IGO ties originating directly from the host country.

H3: The positive effect of larger investments by a sovereign wealth fund in a host country on observing firms’ likelihood of full rather than partial acquisitions is weakened when the number of joint memberships of the home and host countries in IGOs increases.

Insert Table 2 about here

METHODOLOGY

The Research Context: Norway’s SWF and Firms’ Cross-Border Acquisitions

We test our hypotheses based on the cross-border acquisitions undertaken by Norwegian and Swedish firms and the equity investments made by Norway’s SWF². Norway’s SWF is overseen by the Ministry of Finance and managed by the Norges Bank Investment Management (NBIM). It was established in 1990 to reduce Norway’s direct reliance on oil revenues for government spending by investing such revenues in a sustainable manner. Accordingly, the fund invests in a global portfolio of financial instruments comprising foreign equities (60%), fixed income securities (35-40%), and real estate (5%) (Norway SWF, 2016). The Norwegian Ministry

² Norway’s SWF is also known as the Government Pension Fund Global (GPF). Despite its name, the fund is not earmarked for pension expenditures, and is only invested abroad. Norway also has another SWF dedicated to domestic investments.

of Finance stipulates the geographic markets and the type of asset classes the fund should invest in. The fund holds minority stakes in more than 9,000 firms worldwide, and is one of the largest shareholders in many of them (Norway SWF, 2016). Its market value grew from US\$20 billion in 1998 to US\$880 billion in 2015, exceeding Norway's GDP, and making it one of the world's largest SWF (Sovereign Wealth Fund Institute, 2016). Importantly, the investment record of Norway's SWF is transparent, well documented, and publicly available providing rich data for analyses.

The fund's equity investments span a diverse range of industries and geographic regions: 50% are in Europe, 35% in the Americas, Africa and Middle East, and 15% in Asia and Oceania. As with most large SWFs, Norway's SWF benchmarks itself to global markets against indices from the FTSE Group and Bloomberg Barclays, and has a long term investment horizon that allows it to resist volatility in capital markets without having to make costly adjustments (Backer, 2014). Even though the SWF holds minority stakes in its targets, it is an active institutional investor (Chesterman, 2008), that uses both voice and exit strategies to change the ESG practices in specific targets and host countries' institutions (Table 2).

As the following excerpt from the SWF's public website reveals, such activism is aimed at setting standards and creating "better market practices and well-functioning markets³":

We also work with standards covering sectors, specific markets or topics such as corporate disclosure or corporate governance, as well as other standards that are narrower in scope. Such standards can aid in the promotion of good company practices. They are often developed by trade associations or companies, but may also be produced in partnerships between companies, authorities, investors and NGOs.

³ <https://www.nbim.no/en/responsibility/standard-setting/>

It is noteworthy that the signaling role of Norway's SWF by virtue of its standard-setting activities, though not explicitly intended, was anticipated by the Graver Committee's report which established the basis for the SWF's responsible investment principles as follows⁴:

“The [Sovereign Wealth] Fund can also play a role as a model for other funds or investors. The size of the Fund may induce many other investors to track the Fund's activities closely. The decision whether and how to introduce ethical guidelines in *the Fund may send an important signal* [emphasis added] and may cause other funds to follow suit.”

“The [Sovereign Wealth] Fund can also exert influence indirectly through the market. By explicitly communicating a decision not to buy a particular share, *the Fund can send signals* [emphasis added] *to company executives*, other market participants and a company's customers.”

Anecdotal observations generated via interviews with executives in Norwegian companies as well as an extensive coverage of the SWF's activities by the local and global media are suggestive of the anticipated signaling effects on firms' international activities. The example of foreign investments by Telenor—Norway's state-owned telecommunications company—in India illustrates the possibility of such signaling effects. In 2010, Telenor which held a majority stake in an Indian infrastructure company Unitech, faced contractual risk owing to a large corruption scandal involving the award of second-generation telecommunication licenses. So serious was the damage that by 2012, Telenor threatened to quit India, writing off its fixed and intangible assets in India by about US\$1 billion, entirely eliminating its financial exposure to India. At that time, Telenor held investments worth US\$3 billion in India (Business Standard, 2012). In 2013, however, Norway's SWF decided to invest US\$4 billion in the oil and gas, shipping and hydropower industries in India (Business Standard, 2013). In a remarkable turn of events, Telenor not only decided to stay but also invested another US\$4 billion in the Indian telecom sector. Telenor thus reversed its stand on investments and deepened its commitment,

⁴ <https://www.regjeringen.no/en/dokumenter/Report-on-ethical-guidelines/id420232/>

increasing its 26% stake in the Indian joint venture to full ownership, immediately following the SWF's investments in India (Business Standard, 2014).

Although this example does not allow us to distinguish the SWF's signaling effect from the direct information flows that could have occurred between conational firms and their government, it does illustrate how the infusion of SWF investment served as an accreditation of the host country's institutional environment. We examine such effects empirically next.

Sample

To test our hypotheses, we examine all cross-border acquisitions undertaken by 559 Norwegian firms and 1256 Swedish firms during the period 1998-2011, spanning 47 host countries in Europe, Asia, Latin America and North America. Firms' acquisition data was obtained from Thomson SDC Platinum Mergers and Acquisitions database. Our coverage of firms' cross-border acquisitions extends back to 1998 when the SWF first initiated foreign equity holdings, and includes countries where the SWF invested as well as countries where it did not invest. The unit of analysis is a firm's cross-border acquisition. Upon dropping observations with incomplete data we arrived at a final sample of 4003 firm acquisitions.

We included in our sample a comparison group of Swedish firms that share the traits of Norwegian firms along many dimensions. Such a research design allowed us to distinguish signaling effects from potential direct information flows between the SWF and its co-national Norwegian firms (Hypothesis 2). Since our interest is in examining the signaling effect of Norway's SWF that only invests abroad, we excluded Swedish firms' acquisitions in Norway which account for 5% of the total number of Swedish firms' acquisitions. Our results remain robust if we remove the corresponding cross-border acquisitions of Norwegian firms in Sweden which account for 26% of Norwegian firms' total acquisitions.

Table 3 details the country-wise acquisitions for firms in our sample including the cumulative value of SWF investments in each host country over the period 1998-2011.

Insert Table 3 about here

Model Variables

Dependent Variable. The latent construct of interest is the acquiring firm's willingness to make large commitments in host countries. We operationalize this construct as the acquirer's ownership choice – i.e. the decision to make full versus partial acquisitions. As Reuer, Shenkar and Ragozzino (2004: 23) observed “if the firm takes less than 100% of the target's equity, the risk it bears declines proportionally, and more of the risk is borne by the target firm.”

Following prior research, a dummy variable is coded as 1 or full acquisition when a firm acquires a 95%-100% equity stake in a target, and 0, otherwise (Brouthers, 2002; Cui & Jiang, 2012). The acquirer's equity ownership level is obtained from the SDC database. This operationalization also reflects the modal distribution of our data wherein 77.7% of the acquisitions are full acquisitions. In a supplementary analysis, we employed the actual percentage of shares acquired by firms and found similar results.

Explanatory Variable. Norway's SWF investments in a host country are calculated as the cumulative equity investments up to the observation year. We obtained data on the cross-border equity investments made by Norway's SWF directly from the electronic archival records of its global equity holdings⁵. As shown in Table 3, these investments range from 0 to a maximum of US\$513 billion in a given host country. To correct for the skewed distribution of SWF

⁵ <https://www.nbim.no/en/the-fund/holdings/>

investments, we computed the natural log of the SWF investment plus one, so that countries with no SWF investment took a value of 0.

Moderator Variables. There are two moderator variables in our analysis. The first moderator which we label ‘co-national firm’ is a dummy variable which takes a value of 1 if the acquirer is headquartered in Norway, and 0 if its headquarter is in Sweden. The second moderator is the number of IGOs in which the home and host countries in the cross-border acquisition dyad jointly participate in the observation year. The data on IGO joint membership was retrieved from Pevehouse et al. (2004). We counted joint membership in only those IGOs whose core mission overlaps with the ESG mandate of the Norwegian SWF, thereby offering an alternative mechanism for gauging the institutional quality of the host country. Based on IGO mandates described in the *Yearbook of International Organizations* we manually coded all 495 IGOS and identified 79 IGOs that met our criteria. To address the skew towards high IGO membership across our observations we calculated the natural log of the count of IGOs plus one so that country pairs with no joint membership took a value of 0.

Control Variables. To account for alternative explanations of ownership choices in acquisition transactions, we include a number of home and host country, target and acquirer firm and acquisition related characteristics used in the prior literature (Table 4). We also include year dummies to account for unobservable sources of heterogeneity across time.

We account for the total bilateral foreign direct investment (FDI) which correlates with the institutional distances between home and host countries. For instance, economically interdependent countries based on bilateral FDI, also appear to adopt common corporate governance standards (Khanna et al., 2006). Further, the ratio of the FDI from a firm’s home country to the host country yields a measure of economic and political leverage for the acquiring

firm (Holburn & Zelner, 2010). The FDI restrictiveness index which accounts for the time-varying industry-level statutory restrictions and policies concerning foreign investments captures a relevant aspect of the host country's regulatory environment. Apart from these regulatory and economic measures, we account for the physical distance in miles between the capital cities in the home and host countries. Finally, we include a composite measure for the cultural distance between the home and host countries calculated as the average distance along Hofstede's four cultural dimensions (Kogut & Singh, 1988).

We control for a number of target firm characteristics. It is possible that acquirers encounter regulatory restrictions or perceive greater expropriation risks with respect to targets that are government-owned, thereby affecting their ownership levels. Similarly, public versus private targets are held to different standards for transparency and accountability by external stakeholders, which in turn could alter their attractiveness as targets for full ownership. Acquirers are also more likely to take partial stakes in targets from regulated industries such as financial services or natural resources to minimize risk (García-Canal & Guillén, 2008). For their investments to be seen as legitimate, acquirers may choose to limit their ownership stakes in targets that reside in industries such as nuclear arms, land mines, mining and tobacco that are censored by the Norwegian SWF (Vasudeva, 2013). Since the acquirer's ownership choice may be driven by the Norwegian SWF's prior investments in a target firm, we include the value of the total equity as well as the percentage of equity held by the SWF in a target firm. In the absence of financial measures for a large proportion of privately held acquirers (47%) and target firms (57%) in our sample, we use the number of firms that bid for a target as a proxy for the attractiveness of the target which could affect the ownership stake. The number of firms that bid for the target serves as proxy for the attractiveness of the target which could affect the ownership

stake. In addition to these target characteristics, we control for the relatedness of the acquirer and target which could affect familiarity and hence, ownership choices (Reuer, et al., 2004). About 40% of the acquisitions in our sample are in related industries.

We construct similar control variables for the acquiring firm. Private acquirers are less accountable to stakeholders compared to public firms and might be more likely to assume higher risks in their acquisition strategies. Likewise, acquirers who have the backing of their home government may respond to their government's investments in a host country differently (Meggison & Netter, 2001). About 6% of the acquirers in our sample are government-owned firms. Similarly, acquirers from regulated industries may exercise greater caution in their acquisition decisions (García-Canal & Guillén, 2008). About 23% of the acquirers in our sample belong to highly regulated industries. Finally, we control for the acquirer's overall international acquisition experience and country specific experience which could contribute to its learning (Barkema & Schijven, 2008), and affect the extent to which it relies on external referents or signals. 59% of the firms in our sample had conducted fewer than 2 acquisitions and 70% of them had no prior investment in a given host country.

Estimation

Our estimation approach is driven by two main considerations. First, ownership choice (full vs. partial acquisition) can only be observed conditional on firms' entry into a particular host country suggesting an underlying selection criteria. Second, unobserved factors associated with the SWF's investments could drive both firms' host country selection and ownership choices. To account for such selection induced endogeneity (Wooldridge, 2010) that might bias our estimates of ownership choice, we use a two-stage Heckman model wherein we model the

choice of entering a host country in the first stage, and conditional on this choice we estimate the ownership choice (Certo, Busenbark, Woo & Semadeni, 2016).

In the first stage selection model, firms face a polychotomous choice set of countries, among which they choose a country for their foreign acquisition. To model such a selection decision we construct a choice set for each acquisition that a firm undertakes by including countries within the host country's geographical region. Based on the assumption that when considering internationalization, firms are likely to select countries from alternatives within a defined category such as a geographical region (e.g. Vaaler, Aguilera & Flores, 2007), we created choice sets by assigning potential host countries to one of six regions: Africa, Asia, Europe, Latin America, Middle East, North America and Oceania.

Accordingly, in the first stage probit model, firms' host country selection is estimated as a function of host country and acquirer characteristics. The validity of using a probit estimation to model polychotomous choice sets is guided by prior literature which suggests that as the choice set approaches 20 alternatives, the bias relative to using conditional logit models becomes negligible (Katz, 2001; Coupé, 2005). The second stage probit model then estimates ownership choice as a function of the main explanatory variable, i.e. cumulative investment by Norway's SWF in a host country, the two moderator variables and country, target, and acquirer control variables. We use a robust variance estimator clustered by firm-host country dyads to account for the non-independence of observations within these dyads.

To identify firms' ownership choices in the model, in the first stage we include an exclusion restriction⁶: the host country's GDP growth rate. FDI theory suggests that firms are

⁶ Following recent work (Certo et al., 2016) we adopt the terminology of exclusion restriction rather than instrument to emphasize that our main source of endogeneity is sample-induced. We also distinguish the appropriate means to evaluate exclusion restriction validity from that in an instrumental regression setting.

often drawn to invest in countries with a growing GDP because they indicate expanding markets that represent opportunities (e.g. Nachum & Zaheer, 2005). However, GDP growth rate does not have a direct effect on the level of commitment or ownership choice that firms make, which is likely determined by the institutional quality of the host country (e.g. Delios & Henisz, 2000). Indeed, while investors are attracted to countries with high GDP growth rates, the institutional risk and uncertainty in many fast growing economies often precludes large commitments or full acquisitions. Hence, GDP growth rate is a theoretically justifiable exclusion restriction in our model.

In a supplementary analysis not reported here, we use an alternative exclusion restriction that accounts for the attractiveness of a host country's labor market measured as the proportion of university graduates (or related tertiary education) in the total graduate age range (Schneider, Schulze-Bentrop, & Paunescu, 2010). Our findings remained robust to both exclusion restrictions.

The slope of the cumulative probability curve varies based on the values of the observations in the sample, which implies that while the sign and significance of probit coefficients are meaningful, the magnitudes of coefficients are not directly interpretable. Likewise, coefficients of interaction terms do not represent cross partial derivatives. Accordingly, we interpret the effect sizes based on the average marginal effect (Hoetker, 2007). In addition, to aid the interpretation of the interaction coefficients, we present graphs generated by a simulation-based method (King, Tomz & Wittenberg, 2000) that offer a more accurate interpretation of estimates generated from non-linear models (Zelner, 2009).

Insert Tables 4-6 about here

RESULTS

Descriptive Statistics

Tables 4 and 5 provide the summary statistics and correlations of the model variables. Variance inflation factor (VIF) values for our model variables range from 1.00 to 2.23 with a mean VIF of 1.42, thereby suggesting the absence of substantial multicollinearity.

Table 6 provides the results from the descriptive analysis comparing the observed rate of full versus partial acquisitions across various subgroups. The rate of full acquisitions is significantly greater in countries where the SWF investment is high (above the mean value) relative to where it is low (below the mean value), and the rate of full acquisitions increases as SWF investment increases across all sub-groups. At the same time, this increase is significantly lower for co-national (Norwegian) firms (8%) compared to Swedish firms (11%), and significantly greater when joint IGO memberships are low (below the mean) (23%) than when joint IGO memberships are high (above the mean) (3%). These findings based on the observed data suggest preliminary support for Hypotheses 1, 2 and 3.

Insert Table 7, Figures 1a, 2a, 2b, 3a and 3b about here

Tests of Hypotheses

Model 1 in Table 7 reports the results from the first-stage selection model predicting entry into a host country. In Model 1, GDP growth rate has a positive and significant effect on the probability of selecting a host country. The strength of the exclusion restriction is evaluated based on two parameters: the correlation between log SWF investment and the inverse Mill's ratio, and the value of the first stage pseudo-R² (Certo et al., 2016). A correlation of -0.55 and pseudo-R² value of 0.18 indicate moderate strength of the exclusion restriction. Together, these diagnostics support the suitability of GDP growth rate as an exclusion restriction.

From this first-stage analysis we find that greater SWF investment in a host country increases the likelihood that the host country is selected for an acquisition. In particular, a one standard deviation increase in log SWF investment from its mean approximately doubles the probability (0.023 to 0.049) of a firm entering that country ($p < 0.01$).

We now turn to the second-stage models estimating full versus partial acquisition conditioned on entry into a host country. Model 2 presents the estimates for the control variables, and Model 3 includes the main effects. Models 4 and 5 show the estimates for the interaction effects for co-nationality ties and joint IGO membership, respectively. Finally, Model 6 presents the full model including all the main and interaction effects.

Hypothesis 1, predicts that larger investments by Norway's SWF in a host country increases the probability that a firm entering that country will undertake a full rather than partial acquisition. Across all models (Models 3-6), we find a positive and significant effect of SWF investment ($p < 0.01$) on the probability of full versus partial acquisition. Figure 1 provides a graphical depiction of the estimated probability of full acquisition based on Model 3 with the main effects. In particular, a one standard deviation increase in log SWF investment to its mean value (corresponding to an increase in SWF investment from US\$1.5 billion to US\$7.8 billion) increases the probability of a firm's full acquisition by 7.2 percent. Hypothesis 1 is therefore, supported. Illustratively, this effect implies that firms in our sample are approximately 7.2 percent more likely to make a full acquisition in Switzerland than in Belgium, countries that have received cumulative SWF investments of US\$7.6 billion and US\$1.4 billion, respectively in 2003, but are otherwise similar in terms of their institutional and geographic characteristics.

Hypothesis 2 predicts that the positive effect of larger investments by Norway's SWF in a host country on the probability of full ownership by acquiring firms is weakened for co-national

firms compared to Swedish firms. Based on Model 3 we find that compared to co-national firms, Swedish firms are 8.9% more likely to make full acquisitions in any host country ($p < 0.001$). Figure 2a shows consistently higher rates of full acquisitions for Swedish firms over different values of SWF investment. Based on the results in Model 6, a one standard deviation increase in log SWF investment to its mean value, yields a two-fold increase in the full acquisition rate for Swedish firms compared to Norwegian firms. To test whether this difference in the predicted probability of full acquisition (for Norwegian firms compared to Swedish firms) is statistically different from zero, Figure 2b depicts the ‘difference line’ (the predicted probability of full acquisition for Swedish firms subtracted from Norwegian firms) along with the 95% confidence intervals⁷. The downward sloping nature of this difference line illustrates a widening gap in the predicted probability of full acquisition by Swedish firms compared to Norwegian firms as the size of the SWF investment increases. Based on the confidence intervals shown in Figure 2b, this difference line is statistically different from zero when the value of log SWF investment is greater than 1, or US\$2.7 billion (which represents 68 percent of our sample). Hypothesis 2 is therefore, supported.

Hypothesis 3 states that the positive effect of larger investments by Norway’s SWF on the probability of firms’ full acquisitions is negatively moderated by joint IGO memberships between the home and host country. We assessed the effect of high and low levels of IGO membership based on one standard deviation above and below the mean, respectively. Across Models 3-6 the main effect of IGO membership is positive and highly significant ($p < 0.01$). Figure 3a depicts this relationship graphically, showing that at any level of SWF investment,

⁷ When an independent variable is binary or has an empirical distribution owing to large differences in observed values, estimates of probability changes may be misleading. Interpretation based on the difference line avoids this problem (Zelner, 2009).

firms are more likely to make full acquisitions when IGO membership is high. This finding lends support to the notion that IGOs serve as a mechanism for fostering institutional harmonization between countries. In particular, for a one standard deviation increase in log SWF investment to its mean value, the difference in full acquisition rate reduces by 55% in host countries with high versus low IGO membership. Figure 3b shows the difference in predicted probability of full acquisition across high and low levels of IGO membership. This difference line lies in the positive region because the predicted probability of full acquisition is always greater at a high IGO level compared to low IGO level. However, this difference line is downward sloping which suggests that the difference in the predicted probability across high and low IGO levels diminishes as the level of SWF investment in a host country increases. Based on the confidence intervals shown in Figure 3b, the difference in the predicted probabilities is significant for observations where the value of log SWF investment is less than or equal to 2 (or US\$7.8 billion, which is close to the mean value and represents 52% of our sample). These findings support Hypothesis 3.

Across Models 3-6, the inverse Mill's ratio is positive but not significant, suggesting that the unobserved variables affecting ownership choice in an acquisition are positively associated with the choice of host country selection. Recent advances in evaluating selection models suggest that the stronger the exclusion restriction, the more likely the selection bias will be detected and reflected as a significant correction ratio. The moderate strength of the exclusion restriction therefore, should detect the selection bias to the extent that it is present in our model (Certo et al., 2016).

The estimates for the control variables in Model 6 are mostly in accordance with theoretical expectations. Notably, SWF investments in individual target firms do not have a

significant effect on the ownership choices of acquiring firms. We interpret this result to mean that since the SWF's investments in individual firms tend to be uniformly small (typically less than 1% of the target firm's total equity), these investments may not convey much information about differences in the firms' quality when making equity choices. Norwegian firms, in particular, may refrain from acquiring wholly owned stakes in targets in which their SWF has already acquired a stake to avoid suspicion of insider trading by host country regulators.

Supplemental analyses

Alternative specifications. To examine the sensitivity of our findings to the operationalization of the dependent variable, we employ the percentage shares acquired as an alternative dependent variable. Since this variable is bounded between 0 and 100, we re-estimated Model 6 using a Tobit specification. Results presented in Model 7 of Table 8 demonstrate a positive and significant coefficient for SWF investment. A one standard deviation increase in log SWF investment to its mean value increases the ownership of shares by 10.8 percent ($p < 0.01$). The graphical analyses for Tobit models (Bowen, 2010), lends further support for Hypotheses 1-3.

In an alternative specification of the dependent variable, for acquisitions by firms in manufacturing industries, we considered the choice of establishing a manufacturing versus distribution subsidiary in the host country. All else equal, establishing a manufacturing subsidiary requires greater capital investments in fixed assets, thereby reflecting a greater commitment by acquirers (Berry, Guillén & Zhou, 2010). Model 8 in Table 8 shows that a one standard deviation increase in log SWF investment to its mean value increases firms' likelihood of acquiring a manufacturing versus distribution subsidiary by 12.4 times. This result lends further support to our theory that greater SWF investments signal a host country's institutional quality and increase firms' commitments.

Testing the Institutional Mechanisms. If greater investments by Norway's SWF serve as a signal of a host country's institutional quality, the reliance on such signals should reduce in countries such as the U.S. and U.K. that are characterized by stronger corporate governance institutions and informational transparency (Starks & Wei, 2013). Not surprisingly, the U.S. and the U.K. account for 46% of the total SWF investments and 23% of the total acquisition transactions in our sample (Table 3). Model 9 reveals a significant negative interaction between SWF investment and the indicator variable for acquisitions in the U.S. and U.K., which we confirm using graphical analysis. In agreement with the theory underpinning Hypotheses 2 and 3, this result supports the idea that signaling becomes less valuable under conditions of less information asymmetry and better corporate governance. It is worth noting however, that despite the higher institutional quality in the U.S. and the U.K., Norway's SWF has initiated changes in corporate governance practices in these countries. Thus, while firms tend to rely less on signals in better quality institutional contexts, our signaling theory applies to a broad array of countries.

To account for the possibility that the institutional attractiveness of host countries for Norwegian and Swedish firms may stem from the investments of other foreign institutional investors rather than those of Norway's SWF, we controlled for the time varying foreign institutional investments in each host country. Using data from the OECD Institutional Investors Statistics, we calculated this measure as the value of institutional and pension fund shares issued by non-residents (foreign entities) in each host country. Although the limited availability of this data led to a reduction in the sample size, the results in Model 10 though weaker in significance, remain consistent with our reported findings.

Firm Heterogeneity. We find that government-ownership of a Norwegian acquirer does not alter the signaling effect of the SWF's investments on its foreign ownership choices (Model

11). We interpret this finding to mean that in the context of Norway, which is characterized by a social-corporatist institutional environment (Jepperson, 2002), government-owned firms may not enjoy preferential access to information flows from the government. Further, we examine whether Swedish firms that have prior acquisition experience in Norway accrue informational advantages similar to those of Norwegian firms. To test this possibility, Model 12 excludes Swedish firms that invested in Norway within a five-year window prior to the focal acquisition. The differential effect of SWF investment on firms' likelihood of full acquisition between Norwegian and Swedish firms widens by 28 percent, providing additional support for the proximity to the signaler effect specified under Hypothesis 2. Finally, Model 13 reveals that the the acquiring firm's own host country experience does not substitute for the novel information contained in the SWF's investment signal.

Insert Table 8 about here

DISCUSSION

In this study we find that the foreign investments made by a SWF generate signals about host countries' institutional quality that serve to overcome the 'lemons' problem arising from information asymmetry experienced by firms in their international transactions. Building on key ideas from the classical theory of two-party signaling and relational ties (Akerlof, 1970; Spence, 1973; Connelly et al., 2011), our study contributes to signaling theory in primarily three ways.

First, our conceptualization incorporates the role of third-party intermediaries to overcome information asymmetry between the transacting parties. The novelty of our theory is underpinned by the distinctive attributes of SWFs in terms of their government-ownership, size, and institutional activism in host countries. Although prior studies have acknowledged the

potential overseas role of national governments to secure the interests of their home country's firms, a theorization of such effects has relied mostly on political bargains (Henisz & Zelner, 2005) or inter-governmental mechanisms (e.g. Alcacer & Ingram, 2013). By holding the capacity to transform the corporate governance practices in host countries, the size of a SWF's investments serves as an activating signal which operates via institutional mechanisms that have not received much attention in the current literature. Another distinctive feature of our theory of intermediary signalers emerges from the notion that their activities generate unintentional signals for a broad range of receivers that prioritize similar institutional values.

Second, signaling theory is based on the premise that signals help overcome information asymmetry in transactions, but little if any attention has been given to the change in the signaling effect when information becomes available. In this regard, we identify proximity to the sender, operationalized as co-nationality ties to the SWF, as a contingency that alters the effectiveness of the signal for the receivers. While proximity increases the signal's visibility and salience to the receiver, it also generates alternative mechanisms for information flows that reduce the reliance on the signal as a means to overcome information asymmetry. In this regard, we demonstrate the dual role that a sender plays for different receivers—as a signaler to some and a provider of information to others—and point at proximity to the sender as the condition that determines when each of these roles comes into play.

A combination of these informational and institutional mechanisms generates the important insight that firms that are very proximate to the sender will likely not benefit from signaling due to possible alternative channels for information flows. Likewise, firms that are very remote from the signaler and share no common traits or institutional affinity with the signaler will likely not attend to its signals. As our findings show in relation to Swedish firms'

responses to Norway's SWF investments, firms from countries that are institutionally proximate but do not enjoy the same informational advantages as co-national firms benefit the most from the SWF's investment signals.

Third, our theory incorporates the contingent role of the signaling environment, which we capture based on the IGO ties between the home and host countries. IGOs not only reduce the problem of institutional uncertainty by creating an alternative venue for information exchange between countries but also represent a direct and deliberate signal of the host country's commitment to institutional harmonization within a multilateral system. The finding that the value and intensity of the signal from a SWF's investments in a host country is diminished in the presence of IGO ties corroborates the importance of the institutional context within which signaling occurs (Connelly et al., 2011). It also demonstrates the interaction between multiple signals, such that the intermediary's signal is weakened in the presence of a direct signal from the entity of interest.

In the realm of international management, while prior studies have noted the positive spillovers of trade on the environmental standards, labor and human right practices in developing countries (e.g. Vogel, 1995; Prakash & Potoski, 2010), our findings point to such effects, mediated by institutional investors such as SWFs, in a wide range of countries including developed countries. Relatedly, although multinational firms (Shaver, Mitchell & Yeung, 1997; Guillén, 2002) and social communities (Hernandez, 2014; Soule, Swaminathan & Tihanyi, 2014) can generate information spillovers for subsequent investors, the information contained in a SWF's investment signal is markedly different. First, in contrast to multinational firms that tend to vary in terms of the size of their resources, internationalization approaches and investment goals, a SWF is likely to pursue a singular set of nationally determined goals, which makes the

information contained in its signals less noisy and more reliable. The larger size of most SWFs compared to the average multinational firm increases the attention that a SWF's investments is likely to receive from observing audiences, and increases their potential impact. Second, whereas SWFs increasingly encounter pressures for greater transparency about their investments, the propensity to guard strategic information can constrain information spillovers from multinational firms. Third, compared to a government-owned long-term oriented SWF, the potential for bringing about institutional transformation in a host country is considerably lower for any single multinational firm, thereby reducing the potential for generating reliable cues about a host country's future outlook.

Boundary Conditions and Future Research

Although we test our signaling theory of intermediaries in the context of the foreign investments made by Norway's SWF, the validity of our theory applies to a broad range of intermediaries such as activist institutional investors and other SWFs. Notwithstanding important differences across SWFs in terms of their purpose, source of funding, transparency, asset allocation and nature of activism (Aizenman & Glick, 2009; Fernandez & Eschweiler 2008), like Norway's SWF, many SWFs have adopted a long-term investment horizon and situated their investments within the context of their national economic goals. Likewise, an increasing number of SWFs, particularly those originating from developed countries, operate as active institutional investors using a variety of influence tactics to improve the corporate governance practices in host countries (Dimson et al., 2015).

At the same time, a necessary condition for signaling to occur is that the signal must be clearly observable and become the focus of attention. In this regard, there exists considerable variability in the extent to which SWFs publicize their investments and the coverage they receive

in public arenas. For example, the Abu Dhabi Investment Authorities (ADIA), the world's third largest SWF, and the largest among the seven SWFs in the United Arab Emirates is allegedly the world's most secretive SWF—it has never made its financial information public, including even the size of its assets. Observing firms will find it more difficult to discern the motivations and salutary effects of SWFs whose investment strategies are not transparent or well understood (Dimson et al., 2015). Likewise, the signals emanating from the politically motivated foreign investments of SWFs from China and Russia may benefit only a few politically connected firms that can interpret these signals (Shih, 2009; Sovereign Brands Survey, 2010).

Another defining feature of our signaling theory is that signalers activate certain changes in the entity of interest, and although this institutional transformation may take time to take effect and become codifiable, observing firms will interpret a signaler's actions as a precursor to certain changes in the entity of interest. In the context of Norway's SWF, although it initiated its foreign investments in 1998, the substantive effects of its institutional activism on host countries' ESG practices have become apparent only since 2009. As Connelly et al. (2010: 56) note: "...receivers' interpretations of signals in the present could be moderated by their expectations or by what they strive to accomplish in the future via the signaling process." Future research could account for the actual policy changes that a SWF activates in host countries by coding for a SWF's corporate governance reforms and examine such effects on subsequent foreign investments. Although national level changes are accomplished only by large scale social movements (Soule et al., 2014), future research could also examine the interaction between the activities of SWFs and prominent extra-institutional actors (King & Soule, 2007).

While we recognize that not all SWFs hold the potential to influence a host country's institutional environment, they could increase the attractiveness of a host country for their home

country's firms in different ways. As an illustration, a recent U.S. government report notes that one of China's SWF, the China Investment Corporation, has targeted strategic foreign investments and taken active governance roles in the natural resources, utilities and logistics sectors to overcome China's structural weakness in these domains (Koch-Weser & Haacke, 2013). Future research could examine the different roles of SWF investments such as facilitating access to critical technologies in foreign markets to advance domestic technological and economic goals.

To the extent that a SWF's investments are perceived to advance national strategic objectives by host country stakeholders, they could trigger adverse responses resulting in social activism and restrictive regulatory policies directed towards the SWF and its home country's firms (Sorkin, 2008). A related issue pertains to a SWF's image which is intrinsically tied to its country's reputation. By advocating greater adherence with global standards, SWFs from Norway and Singapore tend to be viewed favorably despite their active governance roles in host countries. In contrast, SWFs from Libya, Algeria, Botswana and Nigeria that do not hold such promise may encounter setbacks and challenges to their legitimacy in host countries (Sovereign Brands Survey, 2010). Similarly, investments by SWFs from less reputable countries may serve as a warning signal of potentially declining corporate governance practices in a host country (Adolph, Quince & Prakash, 2017). While Norway's SWF epitomizes the salutary outcomes of a government-owned foreign institutional investor, future work could unpack the deterring role of certain intermediaries.

In conclusion, our study develops a signaling theory of SWFs as intermediaries that have transformed national governments from erstwhile domestic actors into global economic players. From a practical standpoint, our study draws managers' attention to SWF investments as a

potentially useful signal of host countries' institutional environments. In particular, internationalizing firms that prioritize long-term objectives and specific institutional qualities in host countries could calibrate their investments to the activities of SWFs that seek similar goals.

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Figure 1. Relationship between SWF investment and probability of full acquisition

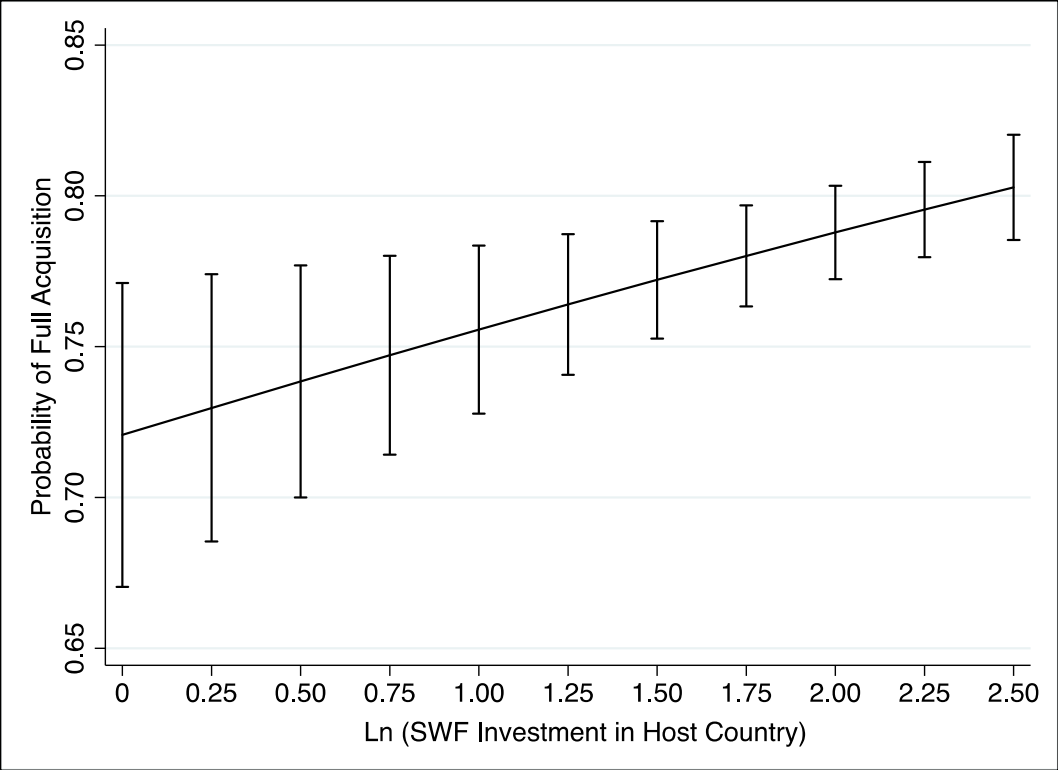


Figure 2a. Relationship between SWF investment and probability of full acquisition for Norwegian and Swedish firms

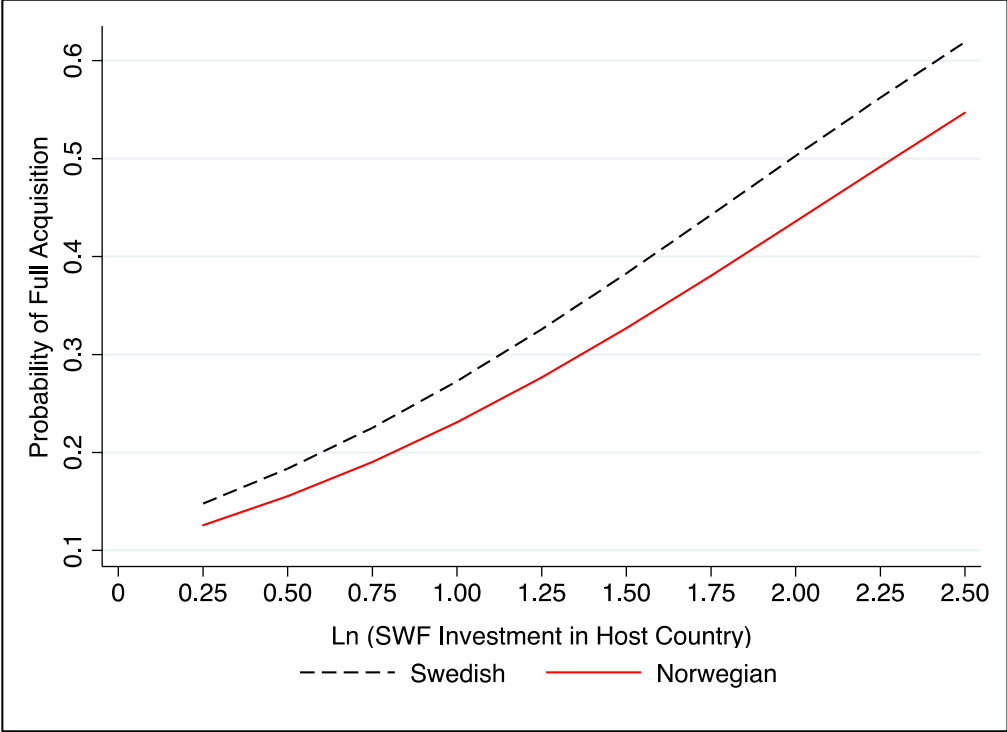


Figure 2b. Difference in predicted probabilities (interaction effect of co-nationality)

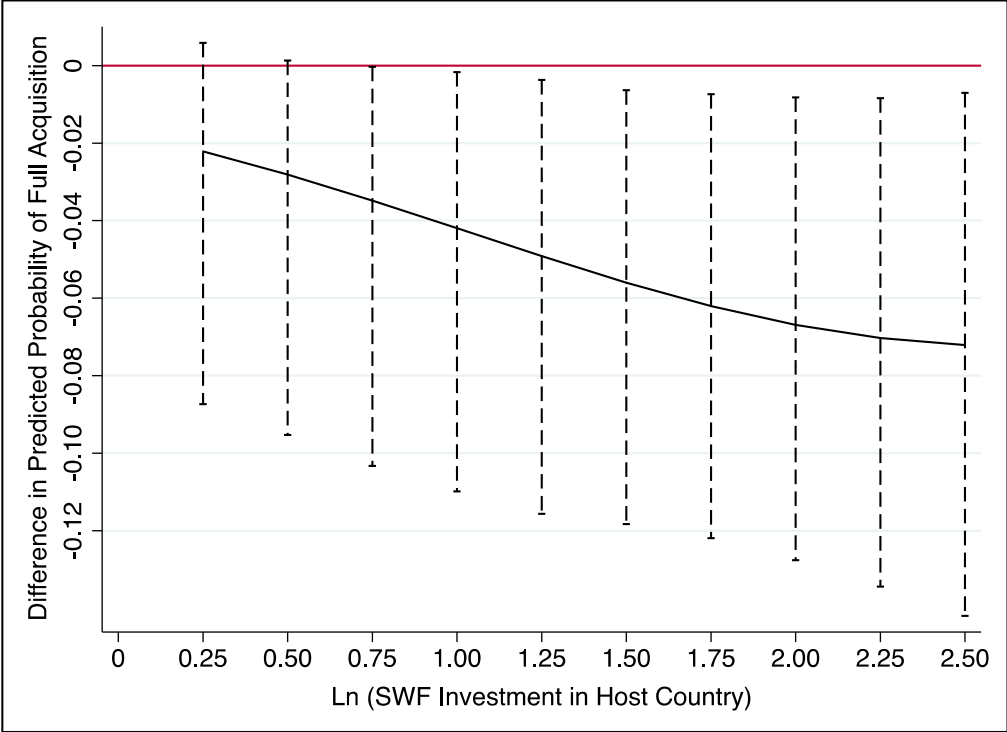


Figure 3a. Relationship between SWF investment and probability of full acquisition for High vs Low IGO Membership (1 s.d. above and below mean level)

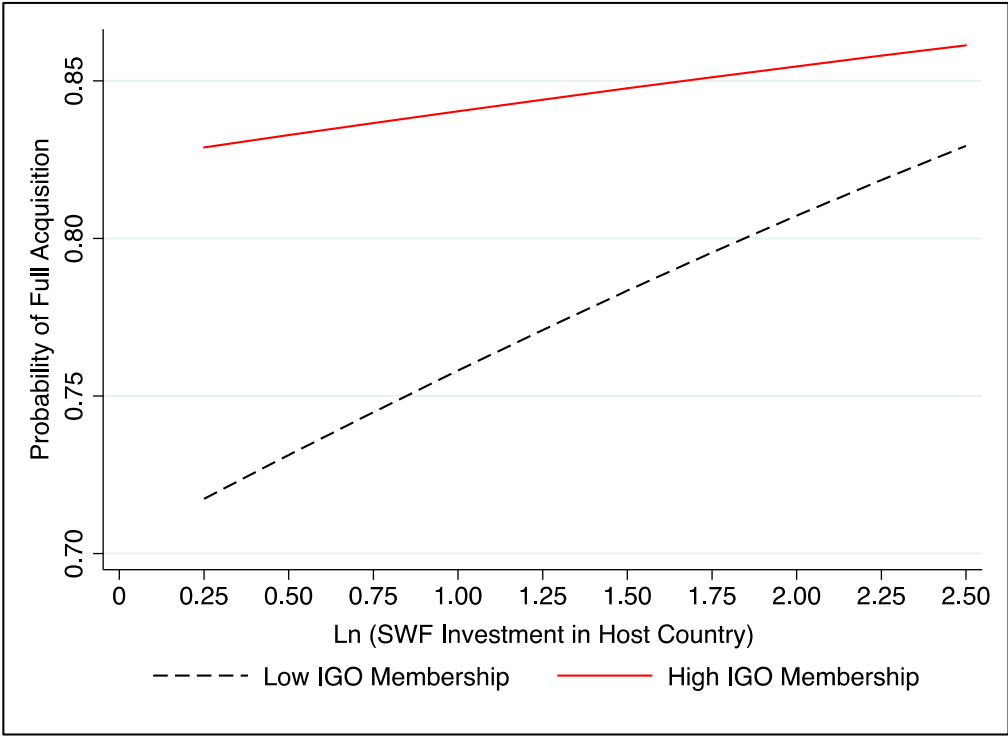


Figure 3b. Difference in predicted probabilities (interaction effect of IGO Membership)

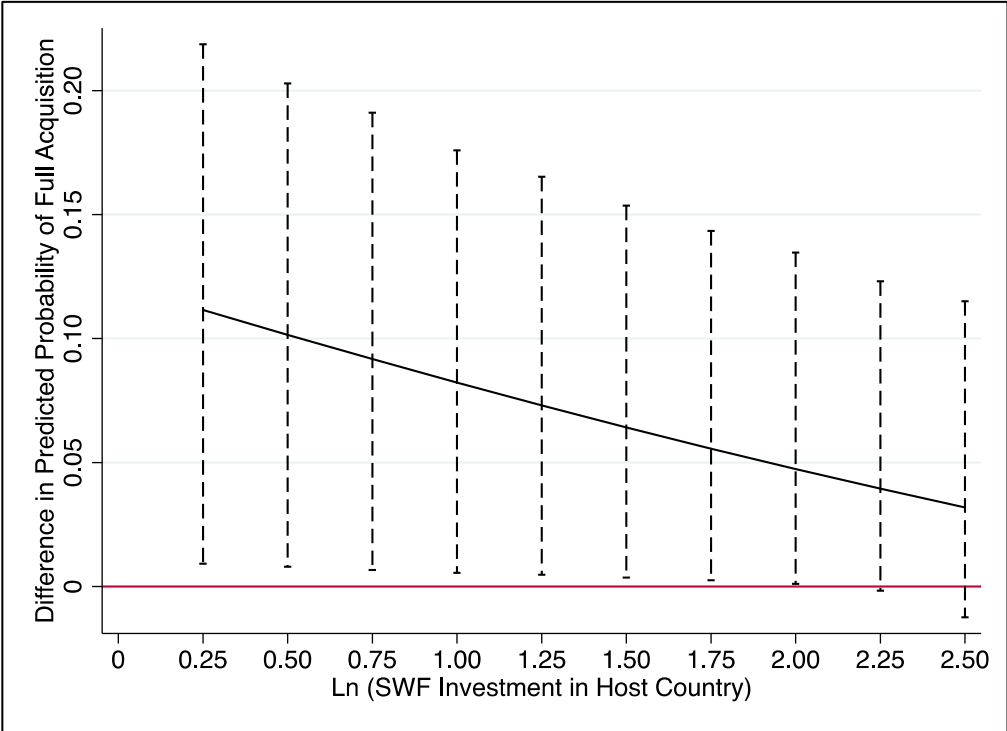


Table 1. Signaling theory of intermediaries and extant signaling theories

Signaling constructs	Classical two-party signaling theory	Signaling theory of relational ties	Signaling theory of third-party intermediaries
Signaler identity and relation to entity of interest	Firms or individuals signal about themselves	Firms form ties with prominent others (e.g. board members, venture capitalists) to signal about themselves	Third party intermediary (e.g. government-owned, activist institutional investor) signals about an entity of interest (e.g. host country)
Signaling mechanism	Receivers interpret the quality of the entity of interest based on its actions or credentials	Receivers interpret the quality of the entity of interest based on the characteristics of the relational tie	Receivers interpret the quality of the entity of interest based on the intermediary's actions (e.g. SWF investment size and activism in host countries)
Signaler action	Deliberate to influence the behavior of particular observer(s)		Not explicitly intended to influence particular observer(s)
Signal credibility	Low – signaler could have incentives to send inaccurate signals	Moderate – affected by the characteristics of the relational tie	High – due to the unintentionality of the signal

Table 2. List of standard setting initiatives by Norway's sovereign wealth Fund*

Year	Entity	Key action	Countries/Scope
<i>Corporate Governance</i>			
2009	Financial Reporting Council	Provided feedback on the review of the Combined Code.	U.K.
2009	BM&F BOVESPA	Provided guidance on regulations revision of the Novo Mercado.	Brazil
2010	Norwegian Corporate Governance Code	Advised on compensation and election committees, stock exchange announcements.	Norway
2010	European Commission	Advised against separate code of governance for financial institutions.	Europe
2010, 2015	Securities & Exchange Commission	Advised on the Proxy System and audit committee disclosure policies.	U.S.
2011	European Commission	Improved the EU Corporate Governance Framework and Transparency Directive.	Europe
2011, 2013	Intl. Integrated Reporting Committee	Recommended reporting measures, explanations and forward-looking reporting.	Global
2012	European Securities & Markets Authority	Challenged ESMA's decision on binding regulatory and legislative instruments.	Europe
2014	Basel Committee & OECD	Advised incorporating OCED Principles of Corporate Governance for banks.	Global
2014	Hong Kong Exchanges & Clearing Ltd	Recommended to continue prohibiting weighted voting rights structures.	Hong Kong
2014	European Securities & Markets Authority	Provided technical advice on developing standards on market abuse regulation.	Europe
2014	European Securities & Markets Authority	Supported regulating high freq. trading firms, OTC derivatives, and securities depositories.	Europe
2014	Intl. Corporate Governance Network	Provided feedback on the proposed corporate governance principles.	Global
2015	Swedish Corporate Governance Board	Advised on revisions of the Swedish Corporate Governance Code.	Sweden
2015	Brazilian Institute of Corp. Governance	Provide recommendations on board election and shareholder voting.	Brazil
2015	European Securities & Markets Authority	Advised on framework to regulate credit rating agencies through transparency.	Europe
2015	European Securities & Markets Authority	Advised on the regulatory technical standards and shareholder voting research.	Europe
2015, 2016	Financial Services Agency of Japan	Helped develop the Corporate Governance Code and promoted dialogue with firms.	Japan
2016	German Corporate Governance Kodex	Provided guidance to the revision of the German Corporate Governance Kodex.	Germany
2016	Financial Stability Board	Advised FSB's implementation of OECD Principles of Corporate Governance.	G-20
2017	S&P Dow Jones Indices	Advised against voteless companies being included in flagship equity indices.	U.S.
2017	Singapore Exchange Limited	Recommended against the admission of dual-class shares.	Singapore
<i>Environmental and Social</i>			
2010	Intl. Accounting Standards Board	Recommended reporting from oil, gas and mining companies to host governments.	Global
2013-2015	Carbon Disclosure Project	Advised on the corporate disclosure and CDP's climate change and water survey.	Multiple
2015	Hong Kong Exchanges & Clearing Ltd	Advised on the Exchange's ESG reporting framework.	Hong Kong
2015	OECD	Recommended improvements for government's role and transparency in extractives.	OECD
2015	World Resources Institute	Supported quantifying and reporting greenhouse gas emissions by companies.	Global
2016	Natural Capital Coalition	Provided feedback on the Natural Capital Protocol.	Global
2016, 2017	Climate-related Financial Disclosure	Provided continued guidance on the Task Force's report.	Multiple
2017	Climate Disclosure Project	Proposed disclosures to focus on material and quantitative information for analysis	Global
2014	Intl. Council on Mining and Metals	Proposed development of a conflict-free standard for mining.	Multiple
2013	Rainforest Foundation Norway	Advised on collaboration with stakeholders for data collection on ESG.	Malaysia
2016	UNPRI	Provided feedback on sustainable financial system, principles and impact.	Global
2016	Securities & Exchange Commission	Advised on regulation of disclosure relating to sustainability and public policy.	U.S.
2016	World Federation of Exchanges	Supported initiative on guidance for sustainability reporting requirements.	Multiple
2016	Singapore Exchange Limited	Advised on Exchange's amendments to sustainability reporting rules.	Singapore
2017	OECD	Advised the Due Diligence for Responsible Business Conduct framework.	OECD countries

*Obtained from <https://www.nbim.no/en/responsibility/standard-setting/consultations/>

Table 3. Firms' acquisitions and Norway's SWF investments by country

	Host Country	Number of Transactions	Percent of total transactions	Total SWF Investment (in billions USD)*	Percent of total SWF investment
1	Argentina	10	0.25	0.01	0.00
2	Australia	66	1.65	29.73	1.82
3	Austria	24	0.60	5.75	0.35
4	Belgium	56	1.40	14.32	0.87
5	Brazil	35	0.87	21.49	1.31
6	Canada	78	1.95	42.95	2.62
7	Chile	18	0.45	1.42	0.09
8	China	30	0.75	18.00	1.10
9	Czech Republic	38	0.95	1.04	0.06
10	Denmark	494	12.34	12.54	0.77
11	Egypt	2	0.05	0.63	0.04
12	Estonia	90	2.25	0.02	0.00
13	Finland	470	11.74	17.96	1.10
14	France	179	4.47	126.29	7.71
15	Germany	291	7.27	99.36	6.07
16	Greece	8	0.20	5.46	0.33
17	Hungary	19	0.47	1.23	0.08
18	Iceland	7	0.17	0.00	0.00
19	India	39	0.97	9.59	0.59
20	Indonesia	5	0.12	2.41	0.15
21	Ireland	20	0.50	6.87	0.42
22	Israel	4	0.10	1.99	0.12
23	Italy	64	1.60	41.30	2.52
24	Japan	27	0.67	117.75	7.19
25	South Korea	24	0.60	22.88	1.40
26	Latvia	15	0.37	0.00	0.00
27	Lithuania	34	0.85	0.00	0.00
28	Luxembourg	12	0.30	1.15	0.07
29	Malaysia	8	0.20	3.67	0.22
30	Mexico	10	0.25	5.83	0.36
31	Netherlands	144	3.60	43.68	2.67
32	New Zealand	10	0.25	0.78	0.05
33	Philippines	2	0.05	0.70	0.04
34	Poland	87	2.17	2.98	0.18
35	Portugal	14	0.35	5.46	0.33
36	Romania	2	0.05	0.00	0.00
37	Russia	98	2.45	14.87	0.91
38	Slovak Republic	9	0.22	0.00	0.00
39	Slovenia	7	0.17	0.00	0.00
40	South Africa	26	0.65	9.01	0.55
41	Spain	90	2.25	44.83	2.74
42	Sweden	366	9.14	32.94	2.01
43	Switzerland	64	1.60	94.23	5.75
44	Turkey	14	0.35	4.05	0.25
45	Ukraine	8	0.20	0.03	0.00
46	United Kingdom	390	9.74	259.14	15.83
47	United States	495	12.37	513.19	31.34
	Total	4,003	100.00	1637.53	100.00

Table 4. Model Variables and Summary Statistics (N=4003)

Variable	Description	Source	Mean	Std.	Min	Max
Outcome Variable: Full Acquisition	1, if acquirer owns 95%-100% shares in target 0, otherwise	SDC Platinum	0.78	0.42	0.00	1.00
Explanatory Variable: Log SWF Investment	Natural log of cumulative investments by the SWF; Log (US\$ bill)	NBIM, Norwegian Ministry of Finance	2.06	1.64	0.00	6.24
Moderator Variable: Co-nationality	1, if acquirer is Norwegian 0, if acquirer is Swedish	SDC Platinum	0.30	0.46	0.00	1.00
Moderator Variable: IGO Joint Membership	Log (count of IGOs + 1)	Pevehouse, Nordstrom, & Warnke (2004)	3.13	0.27	2.30	3.47
GDP Growth Rate in Host Country	The yearly percentage change in GDP of the host country	World Bank	2.67	2.86	-14.81	14.20
Control Variables:						
Total Bilateral FDI	The sum of bilateral FDI between host and acquirer countries (US\$ mil)	UNCTAD	2287.85	4728.94	-14300.00	25267.66
Economic Leverage	Ratio of the FDI from acquirer country to the host country and vice versa	UNCTAD	-13.00	268.13	-5038.00	1646.51
FDI Restrictiveness Index	Statutory restrictions on FDI in host country	OECD	0.09	0.083	0.004	0.63
Physical Distance	Physical distance in thousand miles between capital cities in the host country and Norway/ Sweden	Google	1.56	2.00	0.24	10.99
Cultural Distance	Average distance along Hofstede's four dimensions of culture	Hofstede	2.26	1.74	0.05	9.81
Target Government Owned	1, if government holds > 50% stake in the target firm 0, otherwise	SDC Platinum	0.03	0.18	0.00	1.00
Target Private	1, if target is privately held, i.e. not publicly traded 0, otherwise	SDC Platinum	0.57	0.50	0.00	1.00
Target Regulated Industry	1, if target is in a regulated industry such as financial services and natural resources 0, otherwise	SDC Platinum	0.14	0.34	0.00	1.00
Target Censored Industry	1, if target operates in industries such as tobacco, nuclear arms etc. in which the Norwegian SWF has censored firms 0, otherwise	NBIM	0.21	0.41	0.00	1.00
SWF Investment in Target	Prior investment by the Norwegian SWF in the target (US \$ mill)	NBIM	2.67	45.84	0.00	1907.36
SWF Ownership in Target	Percentage of target owned by the Norwegian SWF	NBIM	0.00	0.002	0.00	0.07
Number of Bidders	Number of bidders for the target	SDC Platinum	1.00	0.04	1.00	2.00
Related Industry	1, if target and acquirer firms are in the same industry based as described in SDC 0, otherwise	SDC Platinum	0.40	0.49	0.00	1.00
Acquirer Private	1, if acquirer is privately held, i.e. not publicly traded 0, otherwise	SDC Platinum	0.18	0.39	0.00	1.00
Acquirer Government Owned	1, if government holds > 50% stake in the target firm 0, otherwise	SDC Platinum	0.06	0.24	0.00	1.00
Acquirer Regulated Industry	1, if target is in a regulated industry such as financial services and natural resources 0, otherwise	SDC Platinum	0.23	0.42	0.00	1.00
Acquirer Intl. Experience	Number of prior international acquisitions by acquirer	SDC Platinum	6.89	14.48	0.00	138.00
Acquirer Experience in Host Country	1, if prior acquisition in host country by acquirer 0, otherwise	SDC Platinum	0.31	0.46	0.00	1.00

Table 5. Correlations* (N= 4003)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1 Full Acquisition	1.00																							
2 Log SWF Investment	0.16	1.00																						
3 Co-nationality	-0.08	-0.01	1.00																					
4 IGO Joint Membership	0.15	0.18	0.14	1.00																				
5 GDP Growth Rate in Host Country	-0.07	-0.31	-0.01	-0.30	1.00																			
6 Total Bilateral FDI	0.07	0.06	-0.17	0.04	0.04	1.00																		
7 Economic Leverage	0.05	0.07	0.03	0.09	-0.07	0.01	1.00																	
8 FDI Restrictiveness Index	-0.15	-0.23	-0.01	-0.43	0.34	-0.02	0.02	1.00																
9 Physical Distance	0.01	0.17	-0.09	-0.61	0.08	0.03	0.05	0.37	1.00															
10 Cultural Distance	-0.07	0.09	-0.29	-0.43	0.12	-0.11	0.00	0.28	0.34	1.00														
11 Target Government Owned	-0.13	-0.08	0.02	-0.02	0.02	0.02	-0.06	0.02	-0.06	-0.01	1.00													
12 Target Private	0.12	0.02	-0.09	0.02	-0.01	0.06	0.01	-0.03	-0.01	0.02	-0.06	1.00												
13 Target Regulated Industry	-0.08	-0.07	0.03	-0.05	0.03	-0.04	0.02	0.08	-0.06	0.00	0.01	-0.12	1.00											
14 Target Censored Industry	0.02	0.14	0.00	-0.02	-0.04	0.02	0.01	0.01	0.08	0.05	-0.06	-0.01	-0.12	1.00										
15 SWF Investment in Target	-0.01	0.04	0.07	-0.01	-0.02	-0.02	0.01	0.00	0.02	0.00	-0.01	-0.05	0.07	0.03	1.00									
16 SWF Ownership in Target	-0.03	0.04	0.08	0.00	-0.03	-0.02	0.05	0.00	0.03	0.01	-0.01	-0.08	0.02	0.00	0.36	1.00								
17 Number of Bidders	-0.02	-0.01	-0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	-0.01	-0.04	0.01	0.00	0.00	0.00	1.00							
18 Related Industry	0.06	-0.02	-0.40	-0.07	-0.02	0.04	-0.01	0.02	0.04	0.14	0.01	0.10	-0.04	-0.03	-0.03	-0.04	-0.01	1.00						
19 Acquirer Private	-0.01	-0.02	0.17	0.09	-0.02	-0.04	-0.01	0.00	-0.10	-0.11	0.06	-0.04	0.02	0.01	-0.02	-0.01	-0.02	-0.09	1.00					
20 Acquirer Government Owned	-0.12	-0.07	0.18	-0.02	0.01	0.00	-0.02	0.02	-0.04	-0.04	0.58	-0.05	0.03	-0.08	0.10	0.08	-0.01	-0.07	-0.01	1.00				
21 Acquirer Regulated Industry	-0.14	-0.06	0.09	-0.01	0.04	-0.04	0.00	0.06	-0.11	-0.05	0.02	-0.16	0.49	-0.06	0.05	0.06	0.01	-0.22	0.19	0.09	1.00			
22 Acquirer Intl. Experience	0.00	0.07	-0.08	-0.09	-0.01	-0.05	0.01	0.02	0.09	0.11	0.04	-0.02	-0.02	0.03	0.01	-0.01	-0.01	0.01	0.04	0.07	0.12	1.00		
23 Acquirer Experience in Host Country	-0.02	0.13	-0.03	0.01	0.00	0.06	0.00	-0.03	0.02	-0.02	0.03	-0.03	0.00	0.00	0.03	-0.01	0.01	-0.03	-0.09	0.05	0.06	0.38	1.00	

*p<0.05 for correlations in bold

Table 6. Sub-Group Comparisons of Rates of Full Acquisitions in 2nd Stage

	Category	% Full Acquisitions	Number of Acquisitions	p-value
All Observations	Low SWF Investment	73%	1579	p≤0.001
	High SWF Investment	83%	1533	
Co-national firm (Norwegian)	Low SWF Investment	69%	427	p≤0.01
	High SWF Investment	77%	441	
Non Co-national firm (Swedish)	Low SWF Investment	75%	1152	p≤0.001
	High SWF Investment	86%	1092	
Low IGO Membership	Low SWF Investment	62%	495	p≤0.001
	High SWF Investment	85%	512	
High IGO Membership	Low SWF Investment	80%	1084	p≤0.05
	High SWF Investment	83%	1021	

Table 7: Two-stage probit estimates of full vs partial acquisitions

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	First stage, DV: Country entry	Controls	Main Effects	Interaction Effects	Interaction Effects	Full Specification
Explanatory Variables						
Log SWF Investment (H1)	0.25*** (0.01)		0.12** (0.04)	0.14*** (0.04)	0.82*** (0.24)	0.80** (0.24)
Co-nationality	-0.10*** (0.02)		-0.23*** (0.07)	-0.11 (0.10)	-0.22** (0.07)	-0.12 (0.10)
IGO Joint Membership	0.24*** (0.06)		0.64*** (0.14)	0.64*** (0.14)	0.82*** (0.16)	0.81*** (0.16)
Log SWF Investment X Co-nationality (H2)				-0.06 [†] (0.04)		-0.05 (0.04)
Log SWF Investment X IGO Joint Membership (H3)					-0.23** (0.08)	-0.21** (0.08)
GDP Growth Rate in Host Country	0.01** (0.00)					
Inverse Mill's Ratio ^a		-0.43*** (0.08)	0.12 (0.14)	0.12 (0.14)	0.09 (0.14)	0.10 (0.14)
Country Variables						
Total Bilateral FDI	0.00*** (0.00)	0.00 (0.00)	0.00 [†] (0.00)	0.00 [†] (0.00)	0.00 (0.00)	0.00 (0.00)
Economic Leverage	-0.00** (0.00)	0.00** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
FDI Restrictiveness Index	0.87*** (0.15)	-2.07*** (0.33)	-1.20** (0.37)	-1.18** (0.37)	-1.26*** (0.37)	-1.25*** (0.37)
Physical Distance	0.19*** (0.01)	-0.03 (0.02)	0.08** (0.03)	0.08** (0.03)	0.06* (0.03)	0.06* (0.03)
Cultural Distance	-0.15*** (0.01)	0.00 (0.02)	-0.07** (0.03)	-0.07** (0.03)	-0.06* (0.03)	-0.06* (0.03)
Target Variables						
Target Government Owned		-0.50** (0.16)	-0.56*** (0.16)	-0.56** (0.16)	-0.55*** (0.16)	-0.55*** (0.16)
Target Private		0.26*** (0.05)	0.25*** (0.05)	0.25*** (0.05)	0.25*** (0.05)	0.26*** (0.05)
Target Regulated Industry		0.00 (0.08)	0.02 (0.08)	0.03 (0.08)	0.03 (0.09)	0.04 (0.09)
Target Censored Industry		-0.02 (0.06)	-0.03 (0.06)	-0.02 (0.06)	-0.02 (0.06)	-0.01 (0.06)
SWF Investment in Target		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
SWF Ownership in Target		-11.39 (12.44)	-10.75 (12.22)	-10.26 (12.30)	-11.58 (12.26)	-11.16 (12.31)
Number of Bidders		-0.30 (0.59)	-0.33 (0.60)	-0.34 (0.59)	-0.33 (0.60)	-0.34 (0.60)
Acquisition Variable						
Related Industry		0.14* (0.06)	0.08 (0.06)	0.08 (0.06)	0.08 (0.06)	0.08 (0.06)
Acquirer Variables						
Acquirer Private	0.03 (0.03)	0.04 (0.07)	0.06 (0.07)	0.07 (0.07)	0.06 (0.07)	0.07 (0.07)
Acquirer Government Owned	-0.03 (0.04)	-0.30* (0.13)	-0.21 [†] (0.13)	-0.21 [†] (0.13)	-0.21 [†] (0.13)	-0.22 [†] (0.13)
Acquirer Regulated Industry	-0.05 [†] (0.03)	-0.30*** (0.08)	-0.32*** (0.08)	-0.32*** (0.08)	-0.32*** (0.08)	-0.31*** (0.08)
Acquirer Intl. Experience	-0.01*** (0.00)	0.01*** (0.00)	0.00 [†] (0.00)	0.00 [†] (0.00)	0.00 [†] (0.00)	0.00 [†] (0.00)
Acquirer Experience in Host Country	0.85*** (0.04)	-0.31*** (0.07)	-0.08 (0.08)	-0.08 (0.08)	-0.10 (0.08)	-0.10 (0.08)
Constant	-2.49*** (0.20)	1.93** (0.63)	-1.15 (0.86)	-1.19 (0.85)	-1.61 [†] (0.88)	-1.61 [†] (0.88)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
R ²	0.18	0.09	0.10	0.10	0.10	0.11
Wald chi ²	2330.13	273.01	306.24	304.01	307.73	305.87
N	89,518	4,003	4,003	4,003	4,003	4,003

*** p<0.001, ** p<0.01, * p<0.05, [†]p<0.1; Two-tailed test; Clustered standard errors by firm-country dyad in parentheses

Table 8: Supplementary analyses for alternative specifications and contingencies

VARIABLES	Model 7 Tobit:% shares acquired in target	Model 8 Manuf. Vs Distrib.	Model 9 US and UK	Model 10 Foreign Inst. Investments	Model 11 Acq. Govt Own: Norwegian firms only	Model 12 Exc. Swe. firms with experience in Norway	Model 13 Prior Exp. In Host Country
Log SWF Investment (H1)	48.72** (16.58)	1.46** (0.56)	0.81*** (0.24)	1.06 [†] (0.54)	0.76 (0.58)	0.86*** (0.25)	0.80** (0.24)
Co-nationality	-4.37 (6.35)	1.42*** (0.43)	-0.12 (0.09)	-0.01 (0.13)		-0.10 (0.10)	-0.12 (0.10)
IGO Joint Membership	56.21** (9.56)	0.72 (0.55)	0.90*** (0.16)	1.07*** (0.21)	1.11*** (0.31)	0.82*** (0.16)	0.81*** (0.16)
Log SWF Investment X Co-nationality (H2)	-4.59 [†] (2.39)	-0.15 (0.13)	-0.05 (0.04)	-0.10* (0.05)		-0.06 (0.04)	-0.05 (0.04)
Log SWF Investment X IGO Joint Membership (H3)	-12.29* (5.30)	-0.36 [†] (0.19)	-0.24** (0.08)	-0.32 [†] (0.17)	-0.20 (0.18)	-0.23** (0.08)	-0.21** (0.08)
US and UK country dummy			0.73*** (0.19)				
Log SWF Investment X US and UK country dummy			-0.12* (0.05)				
Foreign Institutional Investments in Host Country				0.001 (0.00)			
Log SWF Investment X Acq. Govt. Owned					0.04 (0.09)		
Log SWF Investment X Acq. Exp. in Host Country							0.00 (0.03)
Inverse Mill's Ratio ^a	10.54 (9.12)	0.77 (0.51)	0.10 (0.14)	0.08 (0.18)	0.22 (0.21)	0.14 (0.14)	0.10 (0.14)
Control Variables							
Total Bilateral FDI	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Economic Leverage	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
FDI Restrictiveness Index	-81.96*** (23.33)	1.02 (1.01)	-1.12*** (0.37)	-0.91 (0.71)	-1.07 (0.73)	-1.27*** (0.38)	-1.25*** (0.37)
Physical Distance	5.05** (1.92)	0.02 (0.10)	0.06* (0.03)	-0.01 (0.06)	0.04 (0.05)	0.07* (0.03)	0.06* (0.03)
Cultural Distance	-4.63** (1.75)	-0.11 (0.08)	-0.07** (0.03)	-0.06 [†] (0.03)	-0.05 (0.06)	-0.07** (0.03)	-0.06* (0.03)
Target Government Owned	-33.58*** (10.14)	-0.59 (0.74)	-0.53*** (0.16)	-0.52** (0.20)	-0.66** (0.21)	-0.52** (0.16)	-0.55*** (0.16)
Target Private	17.40*** (3.72)	-0.18 (0.17)	0.26*** (0.05)	0.30*** (0.07)	0.35*** (0.09)	0.25*** (0.05)	0.26*** (0.05)
Target Regulated Industry	0.05 (5.78)	0.01 (0.77)	0.04 (0.08)	0.01 (0.10)	-0.04 (0.13)	0.05 (0.09)	0.04 (0.09)
Target Censored Industry	-1.94 (4.42)	0.64*** (0.16)	-0.01 (0.06)	0.06 (0.08)	-0.01 (0.11)	0.04 (0.07)	-0.01 (0.06)
SWF Investment in Target	0.04 (0.04)	0.00 (0.00)	0.00 (0.00)	0.00 [†] (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
SWF Ownership in Target	-1,414.21 (871.76)	5.40 (20.92)	-10.74 (12.19)	-9.00 (19.85)	-3.25 (13.05)	-9.25 (12.17)	-11.16 (12.31)
Number of Bidders	-25.45 (26.93)		-0.44 (0.61)	-0.04 (0.79)		-0.35 (0.59)	-0.34 (0.60)
Related Industry	7.14 [†] (4.28)	0.90*** (0.16)	0.07 (0.06)	0.14 [†] (0.08)	0.13 (0.15)	0.11 [†] (0.06)	0.08 (0.06)
Acquirer Private	-5.90 (4.99)	-0.11 (0.24)	0.07 (0.07)	-0.00 (0.09)	0.27* (0.10)	0.07 (0.08)	0.07 (0.07)
Acquirer Government Owned	-14.06 (8.61)	-0.42 (0.67)	-0.21 [†] (0.13)	-0.07 (0.18)	-0.27 (0.22)	-0.20 (0.13)	-0.22 [†] (0.13)
Acquirer Regulated Industry	-28.80*** (5.21)		-0.33*** (0.08)	-0.25** (0.10)	-0.10 (0.12)	-0.32*** (0.08)	-0.31*** (0.08)
Acquirer Intl. Experience	0.37* (0.15)	0.01 (0.01)	0.00 [†] (0.00)	0.00 (0.00)	-0.01 (0.01)	0.00 (0.00)	0.00 [†] (0.00)
Acquirer Experience in Host Country	-5.28 (5.52)	0.11 (0.25)	-0.10 (0.08)	-0.12 (0.10)	0.10 (0.14)	-0.09 (0.09)	-0.10 (0.10)
Constant	-20.39 (49.01)	-2.95 (2.19)	-1.89* (0.90)	-2.91* (1.19)	-3.27* (1.27)	-1.73 [†] (0.89)	-1.61 [†] (0.88)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.10	0.12	0.11	0.10	0.10	0.10	0.10
Wald chi ²	13.49	134.93	325.83	193.01	123.87	299.74	309.85
N	3,654	1,043	4,003	2,322	1,189	3,656	4,003

*** p<0.001, ** p<0.01, * p<0.05, [†]p<0.1; Two-tailed test; Clustered standard errors by firm-country dyad in parentheses

^aFirst stage regressions not shown. Inverse Mill's Ratio recalculated for Models 8-12. Correlation between Log SWF Investment and the Inverse Mill's ratio range from -0.46 to -0.55. First stage R² values range from 0.18 to 0.21, providing evidence of a moderate strength exclusion restriction.

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