

Sovereign Wealth Fund Governance and National Culture

by

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Abstract

Sovereign Wealth Funds (SWFs) with an aggregate \$4.4 trillion in investments are an important and rising part of global finance. But, there is much suspicion, concern, and confusion regarding the purpose of SWF investments but, in spite of much apprehension about SWF governance and transparency, there is little prior research on the determinants of SWF transparency. Using data for 45 SWFs, this paper examines the determinants of SWF governance transparency. We find that greater SWF governance transparency seems to be somewhat associated with more efficient national regulation and the SWF being a pension fund. Additionally, we confirm the culture based secrecy theory of Gray (1988), finding, that it is negatively associated with SWF governance transparency. Most interestingly, we find strong evidence to document that less SWF governance transparency is significantly associated with national cultural dimension of power distance; while more governance transparency is associated with the national cultural dimensions of long-term orientation and uncertainty avoidance. These novel results should be of much interest to policy makers, capital market participants, managers, and scholars.

1. Introduction

Sovereign Wealth Funds (SWFs) are already one of the largest institutional portfolio investors in the world and are growing rapidly with their total size projected to rival the combined capitalization of all NYSE firms later in this decade (Bagnall and Truman (2013)). However, there is much suspicion, concern, and confusion regarding the investment purposes and transparency of SWFs (Mattoo and Subramanian (2009)). In spite of much apprehension about SWF transparency, there is little prior research on the determinants of SWF transparency. It is not just policy makers and investors, but also corporate managers and their boards that need to understand such determinants in assessing and negotiating potential SWF investments in their firms.

Due to their enormous size and scope, and their consequent power, SWFs are increasingly important for their impact on global finance and can have important geopolitical and social consequences (Aizenman and Glick (2009)). Therefore, their transparency and accountability are important at least to other corporate managers, investors, and governments that are host to SWF investments. According to Kotter and Lel (2011), "SWF objectives and behavior are not well understood. In particular, the foreign government ownership of these investment funds coupled with the opaqueness surrounding their structure and activities are among the major concerns in host countries including the United States." In addition, focusing on target firm valuation, Kotter and Lel (2011), find that transparent SWFs are more likely to invest in financially constrained firms and have a greater impact on target-firm value than opaque SWFs.

Thus, there is considerable interest in SWF transparency, but there is little prior research on its determinants. Consequently, a study of the determinants of sovereign wealth fund transparency is important and can yield critical insights for policy-makers, capital markets, corporate managers, and investors. Further, despite considerable prior research on the role of national culture in determining accounting transparency and disclosure (e.g., Gray (1988)), little previous research has applied such findings to investigate the determinants of SWF transparency and how it might be related to national culture and institutions, or to SWF characteristics.

Using data on 45 SWFs from 31 countries and controlling for relevant variables, this paper examines national institutions, culture, and SWF characteristics as determinants of SWF transparency. We use the Truman SWF transparency score which focuses on governance transparency and is the average of scores for the disclosure of Structure, Governance, Behavior, Accountability and Portfolio Transparency.¹ Thus, the Truman transparency score is not merely an accounting disclosure score as used in numerous governance and accounting studies, but is a comprehensive governance transparency score that goes beyond just disclosure to account for the usefulness of the governance disclosures.

We find that greater SWF governance transparency seems to be associated with more efficient national regulation and the SWF being a pension fund. Additionally, we confirm the secrecy theory of Gray (1988), finding, that a national-culture based measure of secrecy is negatively associated with SWF governance transparency. Most interestingly, we find strong evidence to document that less SWF governance transparency is significantly associated with national cultural dimension of power distance; while more governance transparency is associated with the national cultural dimensions of long-term orientation and uncertainty avoidance. These results should be of much interest to policy makers, capital market participants, corporate managers, and scholars interested in sovereign wealth funds.

¹ It may be useful to note here that the Truman transparency score is not merely an accounting disclosure score as used in numerous governance and accounting studies, but is a comprehensive governance transparency score that goes beyond just disclosure to account for the usefulness of the governance disclosures.

2. The determinants of sovereign wealth fund transparency

2.1 Importance of SWF transparency

While SWFs have been around since the 1950s², they have recently been attracting greater attention since they have grown rapidly with total assets now over \$4.4 trillion (Fabio Bertoni and Lugo (2013)). Thus, SWFs are twice as large as the hedge fund industry and are an important part of global finance and investment management. In general there are two types of SWFs; the first funded by commodity exports like oil or minerals (such as Norway), and the second funded by excess reserves (e.g., China). Both types represent persistent trade and investment surpluses and reflect the inadequacies of global monetary arrangements in dealing with these persistent imbalances; and the resulting accumulated excess reserves then partially or fully invested by the SWFs (Aggarwal (2013)).

Bagnall and Truman (2013) and numerous others confirm that sovereign wealth funds are a large and important component of international portfolio investment (e.g., Kotter and Lel (2011); Megginson, Bortolotti, Fotak and Miracky (2009a); Beck and Fidora (2008); Chhaochharia and Laeven (2008); Johnson (2007)). In many ways, the rising investments by SWFs are part of the larger trend for state-owned companies to invest in foreign private companies. Indeed, SWFs see themselves primarily as professional investment management firms with specific missions and investment objectives to deliver high investment returns from diversified international portfolios.

However, that perception is not universal, especially as SWFs also have important geopolitical and social consequences (Aizenman and Glick (2009)). For example, many question the purpose of SWF investments given the mixed strategic goals of their ultimate sovereign owners (Bahgat (2008)). Others, including western regulatory authorities, have called for greater SWF transparency (Gieve (2008)). In order to address these concerns and suspicions regarding SWFs, in October 2008 the Generally Accepted Principles and Practices governing SWFs (the “Santiago Principles”) were issued by the International Working Group on Sovereign Wealth Funds. These principles are seen as a positive way of promoting understanding regarding SWFs. Nevertheless, many continue to question the impact of the Santiago

² The first SWF was set up in 1951 by the government of Kuwait.

Principles going forward mainly due to their voluntary nature and broad grouping of heterogeneous SWFs. In addition, most SWFs have made little progress towards meeting the Santiago Principles (Truman 2013).

Thus, the main reason why SWF transparency is important is the sovereign ownership of such funds and the consequent confusion regarding the purpose of their investments in private companies. Sovereigns, the ultimate owners of SWFs, are not subject to the same laws as ordinary private investors and sovereigns may not have the same economic and strategic goals for their investments as private investors. For example, sovereigns may have strategic non-economic (political, social, military, or foreign policy) reasons for SWF investments designed to control sources of raw materials, technology, or other strategic resources (Summers (2007)). Further, Knill, Lee and Mauck (2012) show that SWF investment decisions are influenced by non-economic political relations among countries. According to Kotter and Lel (2011) concerns about SWFs include their ability to expropriate wealth from minority shareholders by transferring assets out of the country using their position as large shareholders, objectives other than profit maximization by their government owners (such as pursuing military, political, and social goals), and the risk that SWF investment in target firms by corrupt governments can be used for the personal gains of highly connected individuals.

Such differences in the goals for SWF investment in host country companies give rise to national security concerns and concerns that assets of these private host nation companies may be mismanaged to meet other than value maximizing economic goals. Non-economic management of private companies may give rise to a number of problems including unfair competition for other local companies. These concerns and differences between sovereigns and private investors, combined with low transparency, also lead to a general mistrust of SWFs and to unusual and difficult to assess and generally higher agency costs (Aizenman and Glick (2009)).

Regardless of national security and macroeconomic impacts, SWFs are viewed with suspicion, especially when they make large investments or when they have the potential to make large investments in a foreign private company. In the case of a large SWF investment in a private company, as contrasted

to a similar private investment, the sovereign entity will retain residual control rights, while presumably ownership rights are with respective citizens (but usually exercised through the national government or the SWF management). As noted above sovereigns can have very different goals for such an investment compared to private investors.

When SWFs make large investments in private companies, they can be viewed as sharing both the positive and negative characteristics of a large block-holder. Kotter and Lel (2011) note the similarity of SWFs to companies or funds dominated by a single controlling block-holder. This may entail issues as to the ability of a large shareholder to simply be an activist shareholder and provide enhanced monitoring (Shleifer and Vishny (1986)). However, as noted by Claessens, Djankov, Fan and Lang (2002), according to the model in Stulz (1988), large shareholders are value enhancing until their control exceeds their cash-flow rights and then they are value deprecating through the “entrenchment effect.” This entrenchment effect relates to management’s ability to stave off value-enhancing takeover attempts.

Meggison et al. (2009a) note that the international investments of SWFs serve to facilitate global portfolio investments from less developed financial markets to the better developed financial markets with stronger investor protections. In contrast, Meggison, Bortolotti, Fotak and Miracky (2009b) perform an event study analysis on a sample of SWF acquisitions of equity stakes in publicly traded companies around the world. They find a significantly positive mean abnormal return of about 0.9% around the announcement date. However, they also find that after a year, equity acquisitions by SWFs are generally followed by deteriorating firm performance. These results are consistent with negative agency costs outweighing the benefits of better monitoring.

Consistent with Stulz (1988), Dewenter, Han and Malatesta (2010) analyze the impact of SWF investments on firm values, finding that returns are non-monotonic, first rising and then falling with the share sought for investments (possible evidence of tunneling). Dewenter et al. (2010) also find that the value-enhancing (up to a point) effect of SWF ownership seems to be associated with SWFs being often providing enhanced monitoring as active investors. Alternatively, Kotter and Lel (2011) find little long-run evidence of SWF ownership or shareholder activism affecting values of respectively held firms one

way or the other. Kotter and Lel (2011) note that this finding is consistent with previous research that finds little evidence that large block-holding by pension funds affects firm values.

Thus, while the findings are not uniform, SWFs are raising many concerns in capital markets because of their mixed objectives, secrecy, and because SWFs are increasingly involved in large bloc investments in private companies (Butt, Shivdasani, Stendevad and Wyman (2008)). For example, SWFs have recently taken significant ownership stakes in companies such as Sainsbury, Merrill Lynch, Citibank, and Barclays. Bernstein, Lerner and Schoar (2013) highlight a number of agency problems that are central to SWFs are due to the direct involvement of political leaders in the management process finding that the involvement of political leaders in fund management in SWFs is associated with investment strategies that favor short-term economic policy goals at the expense of longer-term maximization of economic returns.

In 2008 the firm Norton Rose Fulbright surveyed selected respondents as to whether a lack of transparency of SWFs is likely to result in host governments restricting investments by the funds in their countries and found that 60.6 per cent of respondents indicated they already do; suggesting that more SWF Transparency would potentially lesson protectionism and home bias (Norton Rose Fulbright (2008)). This is a consideration especially as it has often been speculated that SWF investments may have a political motivation (e.g., Johan, Knill and Mauck (2010); Gilson and Milhaupt (2008)).

While there has been much work on the impact of SWF transparency and its lack, interestingly there seems to be no study that specifically examines the determinants of SWF transparency. Given the controversy regarding the mixed motives behind SWF investments, it is expected that the degree of SWF transparency and its determinants will continue to be of much interest to both public and private stakeholders of companies partially or potentially owned by SWFs. Investors, communities, suppliers, customers, and host governments need to form their own assessments of the value and other effects of SWF ownership in a company. SWF transparency is important in order for these assessments of the role of SWFs to be accurate. And concomitantly, it is important to know the determinants of SWF transparency.

2.2 Theoretical Foundation: Transactions costs and SWF transparency

Among other reasons outlined above, SWF transparency is also important because its lack raises transactions costs that underlie all business exchange. Given that all contracts are incomplete, the impact of transparency on transactions costs depends on a number of factors that include national culture, ethics, and institutions. This section reviews the relationship between transparency, culture, and transactions costs. It is important to note that as no contract is complete, transactions costs depend critically on non-legal soft factors such as culture, ethics, and institutions.

According to North (1990), the costliness of information needed for measurement and enforcement of exchanges creates “transaction costs.” In fact, since Coase (1937) the transaction cost approach to the study of firms and other governance structures has become recognized as a major theory. Transaction Cost Economics (TCE) suggests that the overall costs of market exchange have a significant impact on respective financial systems (Williamson (1975)). As noted by Williamson (1988) and many others (for instance, Aggarwal and Zhao (2009); Aggarwal and Goodell (2009); Hart (2001); and Hart (1995)), the primary transactions costs of market exchanges stem from the uncertainties of contracts.

Transactions costs are important in a number of financial and business decisions. For example, as shown by Coase (1960), in a theoretically ideal financial system it would make no difference whether financial intermediation was done privately through banks or publicly through markets. However, in reality transactions costs and other factors must be considered. As noted by Aggarwal and Goodell (2009), when the transaction costs are higher, market financing is favored over bank financing (especially as banks are famously opaque).

According to North (1990), transaction costs involve costs of defining property rights and costs of enforcing contracts—including costs of information. “Transformation costs” are the costs associated with using technology and the efficiency of factor and product markets and are reflected in transactions costs. Whether institutions lower or raise overall transactions costs has to do in part with the ability of participants to be informed and to understand the nature of the particular institutional environment. This

includes not just understanding the nature of contracts and their enforceability, but also the temperament and motivations of other participants.

Hart (2001) and Hart (1995) recognize that from the point of view of the equity investor, as an example of contracting, obtaining reliable information about firms is to some degree fallible and innately costly. These costs are shared with the supplier of equity, causing equity financing to be more costly for the firm. This view is supported by Bhattacharya and Thakor (1993) who suggest that a unifying thread amongst a great number of papers on banking is that “intermediation is a response to the inability of market-mediated mechanisms to efficiently resolve informational problems.”

Additionally, central to the need for resolving asymmetric information is identifying that there is a genuine pecuniary cost to not resolving uncertainties. Since Williamson (1975), opportunistic behavior of individuals has been identified as an important and fundamental component of transaction costs. Williamson (1975) suggests that under conditions of imperfect information, all transactions are affected by the problem of “self-interest seeking with guile.” He later offered the alternative definition of opportunistic behavior as the “incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse.” Clearly, what this means is that, given the opportunity, agents are likely to serve their own interests rather than those of the other party to the contract (see also Jensen and Meckling (1976); Fama (1980) on agency costs).

Therefore, the potential for opportunistic behavior is inherently a primary cause of the need to reconcile the asymmetric information central to contracts. It is then the subsequent cost of reconciling asymmetric information that is the central cost of contracting Hart (2001); Hart (1995). Absent the likelihood of opportunistic behavior there would be much less pecuniary need for expensive information gathering. Similarly, in countries with (culturally determined) lower probabilities of opportunistic behavior, transactions cost would be lower. Thus, given the incompleteness of all contracts and the need to constrain opportunistic behavior by contracting parties, it is useful to recognize the important constraining role of national institutions related to transparency as well as culture, ethics, and other behavioral norms in reducing transactions costs of enforcing contracts.

2.3 Transparency, culture, and secrecy

The effects of national characteristics and corporate transparency and disclosure have been extensively considered in the accounting literature. Along with this, national culture is being increasingly investigated as a possible determinant of financial outcomes (see Aggarwal and Goodell (2014b)). While cultural distance has been studied with regard to propensity for SWFs to invest (Johan, Knill and Mauck (2013); Chhaochharia and Laeven (2008)), there has been little study of possible cultural determinants of SWF transparency.

With regard to the association of national cultural and transparency, a seminal article is Gray (1988). Gray (1988) establishes several accounting values and then associates Hofstede cultural dimensions with these values. The accounting values are 1) professionalism versus statutory control, 2) uniformity versus flexibility, 3) conservatism versus optimism, and 4) secrecy versus transparency. For this paper the determinants identified by Gray (1988) with secrecy versus transparency are the most relevant. Gray (1988) hypothesizes a positive association of uncertainty avoidance and power distance and negative association of individualism and masculinity with *secrecy*.

Gray (1988) proposes that secrecy is positively related with uncertainty avoidance, equating to hypothesizing a negative association of transparency and uncertainty avoidance. He reasons that in societies with more ambiguity aversion less information is expected to avoid conflict and competition. In other words, a negative correlation between uncertainty avoidance and financial disclosure is expected. Consistent with this, De Jong, Smeets and Smits (2006) find a negative association of openness with uncertainty avoidance. Salter and Niswander (1995), Taylor-Zarzeski (1996), Jaggi and Low (2000), and Hope (2003) also find significant positive relation between secrecy and uncertainty. However, in contrast to other research, Archambault and Archambault (2003) determine a positive relation between uncertainty avoidance and financial disclosure.

Gray (1988) hypothesizes that power distance is negatively associated with transparency (positive with secrecy). Gray (1988) suggests that this is because less information is needed to preserve power inequalities. Correspondingly, De Jong et al. (2006) find a negative association of openness with power

distance. (see also Velayutham and Perera (2004)). However, Taylor-Zarzeski (1996) Jaggi and Low (2000) and Hope (2003) all find a positive association of financial disclosure and power distance. Although, other research (e.g. Archambault and Archambault (2003) Salter and Niswander (1995)) are inconclusive regarding the association of power distance and financial disclosure.

Gray (1988) suggests a positive association of individualism and transparency. Taylor-Zarzeski (1996) confirms this positive relation between individualism and financial disclosure for a sample of French, German, Hong-Kong, Japanese, Norwegian, British and US companies. A positive association of individualism and disclosure is also consistent with Jaggi and Low (2000), and Archambault and Archambault (2003). Also, De Jong et al. (2006) find a positive association of openness with individualism. However, Salter and Niswander (1995) find a significant negative relation between secrecy and individualism.

Gray (1988) hypothesizes a positive association of disclosure and masculinity. Gray (1988) considers that as more masculine societies would be more concerned with the position of one entity versus another, a more masculine social environment would encourage disclosing more information about its financial position and performance to enable comparisons of the level of performance of different entities. Santema, Hoekert, van de Rijt and van Oijen (2005) suggest that in masculine societies, disclosures (in this case regarding strategy) would include more economic and financial information. According to Taylor-Zarzeski (1996), masculine societies are more competitive and competition requires reduced costs. She finds a positive relation between masculinity and financial disclosure. On the other hand, Jaggi and Low (2000), Hope (2003) and Archambault and Archambault (2003) all find a negative relation between masculinity and financial disclosure while Salter and Niswander (1995) do not find significant relation between secrecy and masculinity. Thus, while aspects of the Gray (1988) accounting secrecy model have been confirmed empirically, there is still some controversy regarding the overall empirical confirmation of the Gray (1988) secrecy model. Nevertheless, the Gray (1988) secrecy model has not been tested in the SWF context.

In addition, both Jaggi and Low (2000) and Hope (2003) investigate the effect of legal origin on the impact of culture on transparency. Jaggi and Low (2000) find that in countries with an English legal origin but not in civil-law countries, culture influences disclosure levels. Hope (2003) finds that culture matters more than legal origin in determining transparency. More recently, Aggarwal and Goodell (2014a) find that transparency is positively related to an English legal origin but negatively related to the national culture quality of uncertainty avoidance (see also Aggarwal and Goodell (2015) for an interesting survey). Bushman, Piotoski and Smith (2004) find that transparency is positively related to a country's legal system and political-economic factors. Similarly, we expect that better regulation and less corruption are associated with better transparency.

2.4 Contribution

While there have been many studies of the macroeconomic and political impacts of the lack of SWF transparency, there seems to be no study of the determinants of SWF transparency. This brief review suggests SWF transparency is very important and there is sufficient reason to suspect that SWF transparency is strongly affected by national culture and institutions, as well as by SWF characteristics. This paper focuses on governance transparency of SWFs and uses the Truman SWF transparency score which is an average of scores for the disclosure of Structure, Governance, Behavior, Accountability and Transparency.

3. Methodology

3.1 Statistical specification and estimation

Our empirical models and their estimates are based on the following Equation 1.

$$W_i = \alpha_i + \sum \beta_{1i} * X_i + \sum \beta_{2i} * Y_i + \sum \beta_{3i} * Z_i + e_i \quad 1)$$

In Equation 1, W_i is sovereign wealth fund governance transparency (SWF_TRANSPARENCY); X_i is a vector of culture variables, Y_i is a vector of national institution variables, while Z_i is a vector of control variables, mainly fund-level variables. These control variables are described in the next sub-

section. This multiple regression statistical model is estimated so that the significance of all coefficients are corrected for any heteroscedasticity using the White procedure.

3.2 Dependent variable

In this paper we use data from the Bagnall and Truman (2013) assessment of international differences in SWF governance transparency.³ The Truman SWF transparency score is an average score based on the disclosure (or lack thereof) of a number of elements. Each disclosure is scored a 1 and a lack of disclosure scored a 0. As described in Bagnall and Truman (2013), the Truman SWF transparency score is an average of scores for the disclosure of Structure, Governance, Accountability and Transparency, and Behavior. Each of these categories consist of 0 or 1 scores on a number of measures. The Structure score is an average of the disclosure of the following elements: Objective Stated, Changes in Structure, Investment Strategy, Source of Funding, Use of Fund Earnings, Integrated with Policies, and Separate from International Reserves.

The Governance Transparency score is an average of the disclosure of the following elements: Role of Government, Role of Managers, Guidelines for Corporate Responsibility, and Ethical Investment Guidelines. The Accountability and Transparency score is an average of the disclosure of the following elements: Categories of Investments, Mandates Identified, Size of Fund, Returns of Fund, Location of Investments, Specific Investments, Currency Composition, Annual Reports, Quarterly Reports, Regular Audits, Published Audits, and Independent Audits. The Behavior score is an average of the disclosure of the following elements: Portfolio Adjustment. Thus, the Bagnall and Truman (2013) scoring for SWFs is quite specifically focused on governance transparency for sovereign wealth funds.

Table 1 shows the country averages in our sample ranked according to the Bagnall and Truman (2013) measure of governance transparency. Examining Table 1, we find that governance transparency

³ Bagnall and Truman (2013) are affiliated with the Peterson Institute for International Economics and this report offers transparency scores for the world's sovereign wealth funds. Bagnall and Truman (2013), note that their SWF transparency "scoreboard" is an extension from the earlier Generally Accepted Principles and Practices for SWFs that is known generally as the "Santiago Principles". The authors of this report are considered to be seminal scholars in the assessing of SWF transparency and have been involved with this topic for many years (e.g., Truman (2013); Truman (2008); Truman (2007)). These transparency scores are widely used by policy makers and others globally.

varies widely across our broad sample of SWFs from thirty-one countries. The SWF countries with the best governance transparency are Norway (98) and New Zealand (94), while Equatorial Guinea (2) has the least governance transparency among sovereign wealth funds.

(Please insert Table 1 about here)

3.3 Independent variables

The independent variables can be classified into three categories: national institutional characteristics, cultural variables, and fund characteristics. Next we describe the composition of each of these categories.

3.3.1 Fund Characteristics

Regarding fund-level control variables, we include a dummy variable that is assigned “1” if the fund is a pension fund and “0” otherwise. This data is also from Bagnall and Truman (2013) (PENSION). Riesen (1997) notes that it is expected that pension funds will have enhanced bias toward home assets. Additionally, we control for fund-level total assets (TOTAL_ASSETS) and total foreign assets (FOREIGN_ASSETS), again using data from Bagnall and Truman (2013). As noted by Bagnall and Truman (2013) the size of an SWF fund is an important factor in determining its influence on both the home country and on the host country. Total foreign assets are also an important determinant of SWF influence in host countries.

3.3.2 National Institutional Characteristics

Our national institutional control variables include a dummy variable for legal origin that is assigned “1” if the home country has an English legal origin and “0” otherwise. The Legal Origins Theory of La Porta, Lopez-de-Silvanes, Shleifer and Vishny (1997) posits that governance is better under an English legal origin. The classification of countries by legal origin is compiled from La Porta, Lopez-de-Silvanes and Shleifer (2006), and Levine (1999). We also include two variables that capture the quality of national regulation from the World Bank Governance Indicators. REGULATION is the efficiency of regulation at the national level, while CNTRL_CORRUPT is the control of corruption. Bushman et al. (2004), for instance, find that efficiency of the judicial system has an impact on firms’ transparency. Here

we are testing how governance institutions affect SWF transparency. The inclusion of these national variables helps us investigate the influence of the owning government on SWF transparency.

3.3.3 National Cultural Characteristics

In order to assess the impact of culture on sovereign wealth governance transparency, we include as independent variables the six cultural dimensions of Hofstede et al. (2010): uncertainty avoidance (UAI), individualism versus collectivism (IDV), power distance (PDI), and masculinity or gender differentiation (MAS), indulgence versus restraint (IVR), and Long-Term Orientation (LTOWVS) based on World Value Surveys data to form the Hofstede estimates of the last dimension⁴. As discussed above, of these six cultural dimensions, we expect uncertainty avoidance to be a particularly important determinant of sovereign wealth fund governance transparency.

To test the culturally based secrecy theory of Gray (1988), for this paper we form a secrecy variable that is the first principal component of UAI, PDI, as well as $-1*IDV$ and $-1*MAS$. This reflects the theory of Gray (1988) that secrecy in corporate reporting is positively related to UAI and PDI and negatively related to IDV and MAS.

Table 2 is a summary of the independent variables used in this study. Together these independent variables reflect the influences that may affect SWF predilection for transparency. In selecting these independent variables we manage to avoid excess correlation among them (generally considered to be estimated models that have VIF factors below 10). We estimate models that focus on national culture then add in turn variables with regard to national governance, and legal origin.

(Please insert Table 2 about here)

4. Results

4.1 Results of regressions: determinants of sovereign wealth fund governance transparency

All models have variance inflation factors (VIF) of less than 10 for all regressors indicating that multicollinearity is unlikely to be a problem. Nevertheless, in subsequent robustness checks we also

⁴ To improve sample sizes Hofstede et al. (2010) employ World Value Surveys to assist in forming their estimates of this last cultural dimension.

address other specific high correlations among particular pairs of independent variables. Further, the significance of all coefficients are corrected for any heteroscedasticity using the White procedure.

Table 3 reports the results of regressions using four different sets of independent variables on TRANSPARENCY. Model 1 uses as independent variables TOTAL_ASSETS, FOREIGN_ASSETS and the six cultural dimensions of Hofstede et al. (2010) (PDI, IDV, MAS, UAI, LTOWVS and IVR). These results show that PDI is negatively significant at 10% and LTOWVS is positively significant at 5%. Model 2 adds to the set of independent variables the dummy variable PENSION to control for whether the sovereign fund is a pension fund or not. PDI is again negatively significant at 10%, while LTOWVS is again positively significant at 5%. The R-square values for Models 1 and 2 are 0.62 and 0.63 respectively. These results suggest that culture alone has considerable explanatory power for determining sovereign wealth fund governance transparency. The results of Models 1 and 2 are consistent with greater sovereign wealth fund governance transparency associated with greater long-term orientation and less power distance.

Model 3 of Table 3 adds to the set of independent and culture variables two institutional control governance variables from the 2012 *Worldwide Governance Indicators* compiled and published by the World Bank: Regulatory Quality (REGULATION) and Control of Corruption (CNTRL_CORRUPT). The results for Model 3 show that PDI is again negatively significant but now at 5%. UAI is now positively significant at 10%. LTOWVS is again positively significant, now at 1%. REGULATION is positively significant at 5%, suggestion that national governance quality translates to sovereign wealth fund governance transparency. The R-square value is now 0.77.

Gray (1988) suggests a negative association of UAI and PDI with transparency. He also suggests a positive association of MAS and IDV. In our results for national cultural dimensions as determinants of sovereign wealth fund governance transparency, we find, consistent with Gray (1988), a negative association of power distance and governance transparency. However, our results also suggest that regulation quality at home may be somewhat confounded with selected culture variables. In fact, we do

not find Masculinity and Individualism to be significant. Further, we find a positive association of uncertainty avoidance and governance transparency.

As noted above, Jaggi and Low (2000) find a significant negative relation between transparency and uncertainty avoidance. Further, Hope (2003) and Salter and Niswander (1995) both find significant negative relation between transparency and Uncertainty Avoidance. In contrast however, Archambault and Archambault (2003) find a positive relation between Uncertainty Avoidance and financial disclosure. In view of these inconsistent earlier findings, our results for the association of national culture with the governance transparency of sovereign wealth funds do not seem unusual.

(Please insert Table 3 about here)

4.2 Results of regressions testing of the secrecy theory of Gray (1988)

Table 4 Models 1 and 2, present results for SWF_TRANSPARENCY as a dependent variable using the as independent variables the constructed secrecy index of Gray (1988). We form a secrecy index for this paper based on the Gray (1988) predicted associations of disclosure with national culture; negative with uncertainty avoidance and power distance and positive with masculinity and individualism. The signs of cultural variables are reversed because Gray (1988) expresses his theory in terms of secrecy, which is opposite to disclosure. Thus, we measure the SECRECY variable as the first principal component of UAI, PDI, –MAS and –IDV.

Model 1 of Table 4 uses the set of independent variables: TOTAL_ASSETS, FOREIGN_ASSETS, ENGLISH, REGULATION, CNTRL_CORRUPT, and PENSION, along with SECRECY. We remove in Model 1 the national culture variables of Hofstede as SECRECY is formed from UAI, PDI, MAS and IDV. The results of estimating Model 1 of Table 4 are that SECRECY is negatively significant and PENSION is positively significant. It is expected that SECRECY is negatively associated with governance transparency and we interpret this result as evidence in support of the theories of Gray (1988). Further, while PENSION was not significant in Table 3, the significant positive association of PENSION and TRANSPARENCY in Table 4 suggests sovereign funds that are pension funds are more transparent.

Model 2 of Table 4 adds to the independent variables of Model 1, the remaining national culture variables IVR and LTOWVS. These two variables from Hofstede are not used in forming SECRECY. Again SECRECY is negatively significant. PENSION is again positively significant, although only at 10%. As in Table 3, LTOWVS is positively significant. IVR is now also positively significant, even though this variable was not significant in Table 3.

Results presented in Table 4 indicate that SECRECY is negatively significant in both models of Table 4. These results support the secrecy theory of Gray (1988) as we would naturally expect greater governance transparency to be associated with less secrecy (with this secrecy variable formed from the four culture variables as in Gray (1988)). In the next section we further examine the role of the degree of foreign assets in sovereign wealth fund assets in the determinants of SWF governance transparency.

(Please insert Table 4 about here)

4.3 Additional testing controlling for the level of foreign assets

In this section we present results controlling for the degree of foreign assets as a percent of total assets. However, to account for possible endogeneity and reduce multicollinearity, we first regress our measures of foreignness (FOREIGN_ASSETS) on the cultural dimensions of Hofstede (2001), PDI, MAS, IDV, UAI, LTOWVS, and IVR; as well as PENSION according to Equation 3. Then we substitute the residuals from Equations 3, for the independent variables FOREIGN_ASSETS. This new variables is now referred to in the text as RESID_FOREIGN_ASSETS. This procedure effectively orthogonalizes FOREIGN_ASSETS against national culture and whether the SWF is a pension fund.⁵

$$FOREIGNNESS = \alpha + \beta_1 PDI + \beta_2 MAS + \beta_3 IDV + \beta_4 UAI + \beta_5 LTOWVS + \beta_6 IVR + \beta_7 PENSION + \varepsilon \quad 3)$$

(Please insert Table 5 about here)

⁵ As noted in prior studies, the residuals in the first equation may result from an incompletely specified model, and so when variables are estimated from estimated residuals, estimated findings can lose accuracy (Pagan (1986)). Substituting the residuals from a first equation is an example of what Pagan (1984) classifies as a type-two generated regressor. Such models with “generated regressors” may lead to uncertainties in interpretation (Oxley and McAleer (1993)). However we consider the use of the orthogonalization procedure in this context to be a reasonable trade-off to reduce the effects of multicollinearity.

The results of Table 5, Models 1, 2, and 3 indicate that RESID_FOREIGN_ASSETS is negatively significant in every model indicating that greater international diversification is associated with less governance transparency. With regard to the national cultural variables of Model 1, the results are generally in agreement with Tables 3 and 4: PDI is negatively significant, while LTOWVS and UAI are positively significant. LTOWVS is also positively significant in Model 3, as is IVR. PENSION is positively significant in every model, while SECRECY is negatively significant in every model in which it is present.

4.4 Discussion

4.4.1 Economic importance of the variables

The results of Model 4, Table 3, along with the standard deviations of Table 2, provide insights into the economic significance of the national culture variables. We choose this model of Table 3 as it is the most comprehensive. We conclude for UAI that with a sigma (standard deviation) for UAI of roughly 21 and a coefficient on UAI of 0.45, that a one sigma change in UAI leads to a 0.30 sigma change in SWF_TRANSPARENCY. Similarly, with a sigma for PDI of roughly 21.5, and a coefficient on PDI of -0.82 , a one sigma change in PDI leads to -0.6 sigma change in SWF_TRANSPARENCY. With LTOWVS, a one sigma change also leads to of 0.30 sigma change in SWF_TRANSPARENCY. With IVR, a one sigma change is associated with a 0.25 sigma change in SWF_TRANSPARENCY. Clearly national culture is an important determinant of SWF governance transparency.

Overall the results that greater governance transparency is associated with more long-term orientation is consistent with the notion commonly put forth with regard to private firms (summarized for example by Koller, Goedhart and Wessels (2005), that greater transparency, aligning intrinsic value to market values, is more suitable for more long-term orientation. In other words, if eventual alignment of intrinsic and market values is inevitable in the long run, why not be transparent? In the case of SWFs, the analogy to intrinsic and market values would be to disclosed activity versus conjectured activity. If thinking of all in the culture is more long term, why engage in obfuscation for short-term reasons?

The results for UAI as an individual cultural dimension seem to be inconsistent with Gray (1988), who proposes that secrecy is positively related with uncertainty avoidance. However, as we have noted, Gray (1988) reasons that in societies with more ambiguity aversion, less information is expected to avoid conflict and competition. But, in this respect, the context of our study being at the national level differs from the firm-level context of Gray (1988). Competition diminishing enthusiasm for disclosure is a reasonable notion at the firm level. But, at the national level there is only one or a few SWFs and they are not typically seen as competitive with one another.

Our result of a negative association of power distance with governance transparency is consistent with Gray (1988), who hypothesizes that power distance is negatively associated with transparency (positive with secrecy). Gray (1988) suggests that this is because lessening information facilitates preserving power inequalities. The explanation regarding power-distance of Gray (1988) is also applicable to SWFs: In high power-distance countries, entities in authority may wish to act in secrecy. This result for power distance is consistent with our result that there is generally more governance transparency with regard to SWFs that are pension funds. One expects more accountability when managing pension holdings that are directly tied to worker compensation.

Regarding our results for home country regulation, we find that a one sigma change in REGULATION is associated with a 0.5 sigma change in SWF_TRANSPARENCY. However, REGULATION is not significant in some models. The coefficient for PENSION is somewhat more variable, between 12 and 15. If we roughly take 13.5 as the average coefficient, with a standard deviation of 0.37 for PENSION, we conclude that a one sigma change in PENSION is associated with approximately a 1.3 sigma change in SWF_TRANSPARENCY.

4.4.1 Overall findings

Overall, home country regulatory quality and the SWF being a pension fund seem to be weakly positively significant in most models (except when they are positive but not significant due to the presence of confounding variables in the estimates). With regard to governance transparency being positively related to home-country regulation, we affirm that greater governance transparency is

concomitant with greater regulatory efficiency and not a substitute. This finding is similar to findings that show that policies that are pro-stakeholder are often undertaken concomitantly with governance and not as a substitute for its lack (Bae, Chang and Kang (2012); Shao, Kwok and Guedhami (2013) and La Porta, Lopez-de-Silvanes, Shleifer and Vishny (2000)). We also confirm the secrecy theory of Gray (1988). As expected, we find that our secrecy variable is consistently negatively significant.

Most interestingly, national culture clearly has a strong and important impact on SWF governance transparency. Three of the six cultural dimensions (Hofstede et al. (2010)) are found to be highly significant and important for SWF governance transparency. For example, uncertainty avoidance and long-term orientation are consistently positively significant in all statistical tests and power distance is consistently negatively significant in all statistical tests. Moreover, the impact of cultural variables on SWF governance transparency is important and economically significant. Overall we find considerable and strong evidence that national culture plays a very important role in determining SWF governance transparency.

5. Conclusions

Sovereign wealth funds are a large, growing, and important part of global investments. However, there is much suspicion, concern, and confusion among countries hosting SWF investments regarding the purpose of these investments. These concerns and suspicions are further magnified by a lack of transparency among many SWFs. However, in spite of this rising concerns, suspicions, and interest, there is little prior research on the cultural and institutional determinants of the transparency of sovereign wealth funds.

Using sovereign wealth fund data for over 45 funds in 31 countries, this paper examines the determinants of the quality of sovereign wealth fund governance transparency. We find that greater SWF governance transparency seems to be associated as expected with more efficient national regulation and the SWF being a pension fund. Additionally, we confirm the secrecy theory of Gray (1988), finding, that

as expected national-culture based measure of secrecy is negatively associated with SWF governance transparency.

Most interestingly, importantly, and unexpectedly, we find very strong evidence to document that SWF governance transparency is significantly negatively associated with the national cultural dimension of power distance; while higher governance transparency is associated with the national cultural dimensions of long-term orientation and uncertainty avoidance. Our estimates document that the influence of cultural variables on SWF governance transparency is both important and economically significant. These novel but important results should be of much interest to policy makers, capital-market participants, managers, and scholars interested in sovereign wealth funds.

References

- Aggarwal, Raj, (2013), "Adjusting to BRICs in glass houses: Replacing obsolete institutions and business models", *Thunderbird International Business Review* 55 (No. 1, January/February) pp. 37-54.
- Aggarwal, Raj, and John W. Goodell, (2009), "Markets and institutions in financial intermediation: National characteristics as determinants", *Journal of Banking and Finance* 33 (No. 10, October) pp. 1770-1780.
- Aggarwal, Raj, and John W. Goodell, (2014a), "Does Asia really have poorer governance?: Evidence from international variations in self-dealing transparency ", in Greg N. Gregoriou, and David Lee, (eds), *Handbook of Asian Finance and Sovereign Wealth Funds* (Amsterdam: Elsevier).
- Aggarwal, Raj, and John W. Goodell, (2014b), "National cultural dimensions in finance and accounting scholarship: An important gap in the literatures?", *Journal of Behavioral and Experimental Finance* 1 (No. 1, March) pp. 1-12.
- Aggarwal, Raj, and John W. Goodell, (2015), "Governance transparency and the institutions of capitalism: Implications for finance", in Jens Forssbaeck, and Lars Oxelheim, (eds), *The Oxford Handbook of Economic and Institutional Transparency* (Oxford, UK: Oxford University Press).
- Aggarwal, Raj, and Shelly Zhao, (2009), "The diversification discount puzzle: Empirical evidence for a transactions cost resolution", *Financial Review* 44 (No. 1, February) pp. 113-135.
- Aizenman, Joshua , and Reuven Glick, (2009), "Sovereign wealth funds: Stylized facts about their determinants and governance", *International Finance* 12 (No. 3, December) pp. 351-386.
- Archambault, Jeffrey J. , and Marie E. Archambault, (2003), "A Multinational Test of Determinants of Corporate Disclosure", *International Journal of Accounting* 38 (No. 2, Summer) pp. 173-194.
- Bae, Sung C. , Kiyong Chang, and Eun Kang, (2012), "Culture, corporate governance, and dividend policy: International evidence", *Journal of Financial Research* 35 (No. 2, Summer) pp. 289-316.
- Bagnall, Allie E., and Edwin M. Truman, (2013), *Progress on sovereign wealth fund transparency and accountability: An updated SWF scoreboard* (Peterson Institute for International Economics)
- Bahgat, Gawdat, (2008), "Sovereign wealth funds: dangers and opportunities", *International Affairs* 84 (No. 6, November) pp. 1189-1204.
- Beck, Roland, and Michael Fidora, (2008), "The impact of sovereign wealth funds on global financial markets", *Intereconomics* 43 (No. 6, November) pp. 349-358.
- Bernstein, Shai , Josh Lerner, and Antoinette Schoar, (2013), "The Investment Strategies of Sovereign Wealth Funds", *Journal of Economic Perspectives* 27 (No. 2, Spring) pp. 219-238.

- Bhattacharya, Sudipto, and Anjan V. Thakor, (1993), "Contemporary banking theory", *Journal of Financial Intermediation* 3 (No. 1, October) pp. 2-50.
- Bushman, Robert M., Joseph D. Piotoski, and Abbie J. Smith, (2004), "What determines corporate transparency?", *Journal of Accounting Research* 42 (No. 2, May) pp. 207-252.
- Butt, Shams , Anil Shivdasani, Carsten Stendevad, and Ann Wyman, (2008), "Sovereign Wealth Funds: A Growing Global Force in Corporate Finance ", *Journal of Applied Corporate Finance* 20 (No. 1) pp. 73-83.
- Chhaochharia, Vidhi, and Luc Laeven, (2008), Sovereign wealth funds: Their investment strategies and performance, CEPR Discussion Papers 6959.
- Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan, and Larry H. P. Lang, (2002), "Disentangling the incentive and entrenchment effects of large shareholders", *Journal of Finance* 57 (No. 6, December) pp. 2741-2771.
- Coase, Ronald H., (1937), "The Nature of the Firm", *Economica* 4 (No. 16, November) pp. 386-405.
- Coase, Ronald H., (1960), "The problem of social cost", *Journal of Law and Economics* 3 (No. 1, October) pp. 1-44.
- De Jong, Eelke, Roger Smeets, and Jeroen Smits, (2006), "Culture and openness", *Social Indicators Research* 78 (No. 1, August) pp. 111-136.
- Dewenter, Kathryn L., Xi Han, and Paul H Malatesta, (2010), "Firm values and sovereign wealth fund investments", *Journal of Financial Economics* 98 (No. 2, November) pp. 256-278.
- Fabio Bertoni, Fabio, and Stefano Lugo, (2013), "Testing the strategic asset allocation of stabilization sovereign wealth funds", *International Finance* 16 (No. 1, February) pp. 95-119.
- Fama, Eugene F., (1980), "Agency problems and the theory of the firm", *Journal of Political Economics* 88 (No. 2, April) pp. 288-307.
- Gieve, John, (2008), "Sovereign wealth funds and global imbalances", *Bank of England Quarterly Bulletin* 2 (No., June) pp. 196-202.
- Gilson, Ronald J., and Curtis J. Milhaupt, (2008), "Sovereign wealth funds and corporate governance: A minimalist response to the new mercantilism", *Stanford Law Review* 60 (No. 5, March) pp. 1345-1370.
- Gray, Sidney J., (1988), "Towards a theory of cultural influence on the development of accounting systems internationally", *ABACUS* 24 (No. 1, March) pp. 1-15.
- Hart, Oliver, (1995), *Firms, contracts, and financial structure* (Oxford University Press, New York).
- Hart, Oliver D., (2001), "Financial contracting", *Journal of Economic Literature* 39 (No. 4, December) pp. 1079-1100.
- Hofstede, Geert, (2001), *Culture's Consequences* (Sage Publications, London).
- Hofstede, Geert, Gert Jan Hofstede, and Michael Minkov, (2010), *Cultures and Organizations: Software of the Mind* (McGraw-Hill, USA).

- Hope, Ole-Kristian, (2003), "Firm-Level Disclosures and the Relative Roles of Culture and Legal Origin", *Journal of International Financial Management and Accounting* 14 (No. 3, October) pp. 218-248.
- Jaggi, Bikki, and Pek Yee Low, (2000), "Impact of culture, market forces, and legal system on financial disclosures", *International Journal of Accounting* 35 (No. 4, October) pp. 495-519.
- Jensen, Michael, and William Meckling, (1976), "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure", *Journal of Financial Economics* 3 (No. 4, October) pp. 305-360.
- Johan, Sofia A., April M. Knill, and Nathan Mauck, (2010), Determinants of sovereign wealth fund investment in private equity, Tilburg University, Tilburg Law and Economic Center Discussion Paper 2010-044.
- Johan, Sofia, April Knill, and Nathan Mauck, (2013), "Determinants of sovereign wealth fund investment in private equity vs public equity", *Journal of International Business Studies* 44 (No. 2) pp. 155-172.
- Johnson, Simon, (2007), "The rise of sovereign wealth funds", *Finance and Development* 44 (No. 3, September) pp. 1.
- Knill, April, Bong-Soo Lee, and Nathan Mauck, (2012), "Bilateral political relations and sovereign wealth fund investment", *Journal of Corporate Finance* 18 (No. 1) pp. 108-112.
- Koller, Tim, Marc Goedhart, and David Wessels, (2005), *Valuation: Measuring and Managing the Value of Companies* (John Wiley & Sons, New York).
- Kotter, Jason, and Ugur Lel, (2011), "Friends or Foes? Target Selection Decisions of Sovereign Wealth Funds and Their Consequences", *Journal of Financial Economics* 101 (No. 2, August) pp. 360-381.
- La Porta, Rafael, Lopez-de-Silvanes, Andrei Shleifer, and Robert Vishny, (2000), "Agency Problems and Dividend Policies Around the World", *Journal of Finance* 55 (No. 1, February) pp. 1-33.
- La Porta, Rafael, Florencio Lopez-de-Silvanes, and Andrei Shleifer, (2006), "What works in securities laws?", *Journal of Finance* 61 (No. 1, February) pp. 1-32.
- La Porta, Rafael, Florencio Lopez-de-Silvanes, Andrei Shleifer, and Robert .W. Vishny, (1997), "Legal Determinants of External Finance", *Journal of Finance* 52 (No. 3, July) pp. 1131-1150.
- Levine, Ross, (1999), "Law, finance, and economic growth", *Journal of Financial Intermediation* 8 (No. 1-2, January) pp. 36-67.
- Mattoo, Aaditya, and Arvind Subramanian, (2009), "Currency undervaluation and sovereign wealth funds", *World Economy* 32 (No. 8, August) pp. 1135-1164.
- Megginson, William L. , Bernardo Bortolotti, Veljko Fotak, and William Miracky, (2009a), Sovereign wealth fund investment patterns and performance, Working Papers 2009.22, Fondazione Eni Enrico Mattei

- Megginson, William L., Bernardo Bortolotti, Veljko Fotak, and William Miracky, (2009b), Sovereign wealth fund investment patterns and performance, Fondazione Eni Enrico Mattei Working Papers 2009.22.
- North, Douglass C., (1990), *Institutions, Institutional Change, and Economic Performance* (Cambridge University Press, Cambridge, UK).
- Norton Rose Fulbright, (2008), "Sovereign wealth funds and the global private equity landscape survey", www.nortonrosefulbright.com/knowledge/publications/15287/sovereign-wealth-funds-and-the-global-private-equity-landscape-survey, June 2008, accessed January, 2013
- Oxley, Les, and Michael McAleer, (1993), "Econometric issues in macroeconomic models with generated regressors", *Journal of Economic Surveys* 7 (No. 1) pp. 1-40.
- Pagan, Adrian, (1984), "Econometric issues in the analysis of regressions with generated regressors ", *International Economic Review* 25 (No. 1, February) pp. 221-247.
- Pagan, Adrian, (1986), "Two stage and related estimators and their applications", *Review of Economic Studies* 53 (No. 4, August) pp. 517-538.
- Riesen, Helmut, (1997), "Liberalizing foreign investments by pension funds: Positive and normative aspects ", *World Development* 25 (No. 7, July) pp. 1173-1182.
- Salter, Stephen B. , and Frederick Niswander, (1995), " Cultural influence on the development of accounting systems internationally: A test of Gray's (1988) theory", *Journal of International Business Studies* 26 (No. 2, Second Quarter) pp. 379-397.
- Santema, Sicco, Marijke Hoekert, Jeroen van de Rijt, and Aswin van Oijen, (2005), "Strategy disclosure in annual reports across Europe: a study on differences between five countries", *European Business Review* 17 (No. 4) pp. 352-366.
- Shao, Liang, Chuck C Y Kwok, and Omrane Guedhami, (2013), "Dividend Policy: Balancing Shareholders' and Creditors' Interests", *Journal of Financial Research* 36 (No. 1, Spring) pp. 43-66.
- Shleifer, Andrei, and Robert W. Vishny, (1986), " Large shareholders and corporate control ", *Journal of Political Economics* 94 (No. 3, June) pp. 461-488.
- Stulz, Rene M., (1988), "Managerial control of voting rights : Financing policies and the market for corporate control", *Journal of Financial Economics* 20 (No. 1-2, January) pp. 25-54.
- Summers, Lawrence H., (2007), "Funds that shake capitalist logic", *Financial Times*, July 29.
- Taylor-Zarzeski, Marilyn, (1996), "Spontaneous Harmonization Effects of Culture and Market Forces on Accounting Disclosure Practices", *Accounting Horizons* 10 (No. 1, March) pp. 18-37.
- Truman, Edwin M., (2007), Sovereign wealth funds: The need for greater transparency and accountability, Policy Briefs PB07-6, Peterson Institute for International Economics.
- Truman, Edwin M., (2008), A blueprint for sovereign wealth fund best practices Policy Briefs PB08-3, Peterson Institute for International Economics, Policy Briefs PB08-3, Peterson Institute for International Economics.

- Truman, Edwin M., (2013), Implementation of the Santiago principles for sovereign wealth funds: A progress report, Peterson Institute for International Economics, Policy Brief Number 13-31.
- Velayutham, Sivakumar, and Hecto Perera, (2004), "The influence of emotions and culture on accountability and governance", *Corporate Governance* 4 (No. 1) pp. 52-64.
- Williamson, Oliver E., (1975), *Markets and Hierarchies: Analysis and Antitrust Implications* (Free Press, New York).
- Williamson, Oliver E., (1988), "Corporate Finance and Corporate Governance", *Journal of Finance* 43 (No. 3, July) pp. 567-592.

Table 1
Country Average Governance Transparencies of Sovereign Wealth Funds

This table displays country-level averages for sovereign wealth fund governance transparency scores from Bagnall and Truman (2013) .

Country	Score	Country	Score
Norway	98	Russia	53
New Zealand	94	Mexico	44
France	93	UAE	44
Ireland	90	Bahrain	39
Australia	89	Vietnam	38
Canada	89	Brazil	30
Chile	88	Algeria	29
United States	84	Iran	29
Trinidad and Tobago	83	Venezuela	28
Thailand	80	Oman	27
Kuwait	73	Nigeria	18
Singapore	71	Qatar	17
Hong Kong	70	Angola	15
Korea	69	Libya	6
China	67	Equatorial Guinea	2
Malaysia	59		

Table 2**SWF Governance Transparency: Descriptive Statistics and Summary of Data Sources**

This table lists the mean, standard deviations, minimum and maximum; and sources of variables used in regressions which are reported in Tables 3, 4 and 5.

Variable	Mean	Standard Deviation	Min	Max	Source
SWF_TRANSPARENCY	60.98	28.39	2.00	98.00	SWF transparency score from Bagnall and Truman (2013)
TOTAL_ASSETS	108.70	165.33	0.08	720.00	Bagnall and Truman (2013)
FOREIGN_ASSETS	83.72	153.10	0.08	720.00	Bagnall and Truman (2013)
UAI	58.49	21.31	8.00	95.00	Uncertainty Avoidance, Hofstede et al. (2010)
IDV	43.49	27.75	12.00	91.00	Individualism, Hofstede et al. (2010)
PDI	65.44	21.51	22.00	104.00	Power Distance, Hofstede et al. (2010)
MAS	51.51	12.41	8.00	73.00	Masculinity, Hofstede et al. (2010)
LTOWVS	35.56	22.37	9.00	100.00	Long-Term Orientation, Hofstede et al. (2010)
IVR	53.58	21.90	17.00	100.00	Indulgence versus Restraint, Hofstede et al. (2010)
ENGLISH	0.36	0.48	0.00	1.00	Dummy variable that is assigned "1" if the legal origin of the respective country is English and "0" otherwise. Compiled from La Porta et al. (2006), Levine (1999).
REGULATION	0.55	1.16	-2.53	1.96	World Bank Governance Indicators
CNTRL_CORRUPT	0.65	1.21	-1.56	2.32	World Bank Governance Indicators
PENSION	0.16	0.37	0.00	1.00	Bagnall and Truman (2013)
SECRECY	0.00	1.43	-2.43	2.17	Variable formed for this paper as a principal component from Hofstede et al. (2010) following Gray (1988)
FOREIGNNESS	0.72	0.33	0.10	1.00	Foreign assets as a ratio to total assets, orthogonalized against UAI, PDI, IDV, MAS, LTOWVS, IVR and PENSION as described in text

Table 3**Determinants of SWF Governance Transparency**

Table shows results of regressions with robust standard errors. VIF for all variables in all models less than 10. SWF_TRANSPARENCY is SWF transparency score from Bagnall and Truman (2013). TOTAL_ASSETS, and FOREIGN_ASSETS are SWF total and foreign assets from Bagnall and Truman (2013). UAI, IDV, PDI, MAS, LTOWVS, IVR are national culture dimensions from Hofstede et al. (2010). ENGLISH is a dummy variable that is assigned "1" if country of SWF has an English legal origin and "0" otherwise. REGULATION and CNTRL_CORRUPT are efficiency of regulation and control of corruption from World Bank governance indicators. PENSION is a dummy variable that is assigned "1" if fund is a pension fund and "0" otherwise.

	SWF_TRANSPARENCY			
	1	2	3	4
TOTAL_ASSETS	0.08 (0.115)	0.04 (0.362)	0.05 (0.118)	0.07* (0.068)
FOREIGN_ASSETS	-0.05 (0.370)	-0.01 (0.846)	-0.03 (0.483)	-0.05 (0.336)
UAI	0.10 (0.578)	0.08 (0.663)	0.29* (0.077)	0.45*** (0.001)
IDV	0.20 (0.336)	0.16 (0.437)	-0.12 (0.505)	-0.25 (0.202)
PDI	-0.68* (0.053)	-0.68* (0.054)	-0.77** (0.023)	-0.82*** (0.006)
MAS	-0.24 (0.466)	-0.17 (0.625)	-0.00 (0.993)	-0.10 (0.721)
LTOWVS	0.41** (0.025)	0.39** (0.023)	0.44*** (0.001)	0.38*** (0.008)
IVR	0.17 (0.407)	0.17 (0.463)	0.15 (0.373)	0.08 (0.571)
ENGLISH				15.08 (0.271)
REGULATION			13.87** (0.025)	13.95** (0.022)
CNTRL_CORRUPT			-2.15 (0.751)	-4.26 (0.553)
PENSION		10.42 (0.116)	8.11 (0.165)	8.22 (0.204)
INTERCEPT	75.80** (0.035)	75.58** (0.026)	66.06** (0.026)	70.51*** (0.004)
Observations	45	45	45	45
Adj R-square	0.62	0.63	0.77	0.78
F-test	12.87*** (0.000)	11.01*** (0.000)	22.00*** (0.000)	24.01*** (0.000)

*significant at 10% level, **significant at 5% level; ***significant at 1% level

Table 4**Determinants of SWF Governance Transparency: Further Tests With the Gray (1988) Secrecy Variable**

Table shows results of regressions with robust standard errors. VIF for all variables in all models less than 10. SWF_TRANSPARENCY is SWF transparency score from Bagnall and Truman (2013). TOTAL_ASSETS, and FOREIGN_ASSETS are SWF total and foreign assets from Bagnall and Truman (2013). SECRECY is formed from the national culture dimensions from Hofstede et al. (2010), according to Gray (1988). ENGLISH is a dummy variable that is assigned "1" if country of SWF has an English legal origin and "0" otherwise.. REGULATION and CNTRL_CORRUPT are efficiency of regulation and control of corruption from World Bank governance indicators. PENSION is a dummy variable that is assigned "1" if fund is a pension fund and "0" otherwise.

	SWF_TRANSPARENCY	
	1	2
TOTAL_ASSETS	0.03 (0.249)	-0.01 (0.835)
FOREIGN_ASSETS	-0.01 (0.801)	0.03 (0.546)
SECRECY	-7.02*** (0.010)	-8.51*** (0.010)
LTOWVS		0.048*** (0.009)
IVR		0.32** (0.035)
ENGLISH		-13.03 (0.225)
REGULATION	7.98 (0.520)	8.82 (0.311)
CNTRL_CORRUPT	1.78 (0.867)	3.78 (0.654)
PENSION	15.45** (0.020)	11.98* (0.084)
INTERCEPT	49.68*** (0.000)	20.13 (0.132)
Countries	45	45
R-square	0.61	0.70
F-test	14.70*** (0.000)	15.01*** (0.00)

*significant at 10% level, **significant at 5% level; ***significant at 1% level

Table 5

Determinants of SWF Governance Transparency: Robustness Tests Controlling for Asset Foreignness

Table shows results of regressions with robust standard errors. VIF for all variables in all models less than 10. SWF_TRANSPARENCY is SWF transparency score from Bagnall and Truman (2013). TOTAL_ASSETS, and FOREIGN_ASSETS are SWF total and foreign assets from Bagnall and Truman (2013). SECRECY is formed from the national culture dimensions from Hofstede et al. (2010), according to Gray (1988). ENGLISH is a dummy variable that is assigned “1” if country of SWF has an English legal origin and “0” otherwise. REGULATION and CNTRL_CORRUPT are efficiency of regulation and control of corruption from World Bank governance indicators. PENSION is a dummy variable that is assigned “1” if fund is a pension fund and “0” otherwise. RESID_FOREIGN_ASSETS is the percent of assets that are foreign orthogonalized against national culture and PENSION as described in text.

	SWF_TRANSPARENCY		
	1	2	3
TOTAL_ASSETS	0.04*** (0.009)	0.03** (0.019)	0.02 (0.109)
RESID_FOREIGN_ASSETS	-26.39** (0.025)	-27.02*** (0.006)	-26.11** (0.021)
SECRECY		-8.36*** (0.001)	-8.47*** (0.001)
UAI	0.43*** (0.000)		
IDV	-0.25 (0.166)		
PDI	-0.84*** (0.001)		
MAS	0.08 (0.608)		
LTOWVS	0.39*** (0.004)		0.45*** (0.010)
IVR	0.11 (0.393)		0.35** (0.011)
ENGLISH	11.06 (0.290)	-5.39 (0.573)	-14.90 (0.100)
REGULATION	11.25** (0.026)	5.75 (0.654)	5.46 (0.509)
CNTRL_CORRUPT	-1.36 (0.819)	4.21 (0.682)	7.21 (0.357)
PENSION	11.29** (0.016)	15.77*** (0.002)	10.96** (0.027)
INTERCEPT	61.83*** (0.006)	50.02*** (0.000)	18.30*** (0.110)
Countries	45	45	45
R-square	0.82	0.65	0.74
F-test	37.63*** (0.000)	15.75*** (0.000)	19.87*** (0.000)

*significant at 10% level, **significant at 5% level; ***significant at 1% level

Appendix 1: SWF Governance Transparency: Table of Pearson Correlation Coefficients: Independent Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 SWF_TRANSPARENCY	1.00														
2 TOTAL_ASSETS	0.27	1.00													
3 FOREIGN_ASSETS	0.18	0.94	1.00												
4 UAI	-0.30	-0.22	-0.09	1.00											
5 IDV	0.57	0.02	-0.03	-0.23	1.00										
6 PDI	-0.67	-0.01	0.02	0.36	-0.79	1.00									
7 MAS	-0.10	-0.25	-0.37	-0.22	0.16	-0.03	1.00								
8 LTOWVS	0.26	0.29	0.17	-0.28	-0.16	0.10	-0.15	1.00							
9 IVR	0.16	-0.34	-0.32	-0.02	0.29	-0.44	0.30	-0.49	1.00						
10 ENGLISH	0.57	0.01	-0.06	-0.66	0.69	-0.62	0.32	0.06	0.28	1.00					
11 REGULATION	0.66	0.20	0.18	-0.34	0.54	-0.45	-0.05	-0.02	0.07	0.65	1.00				
12 CNTRL_CORRUPT	0.64	0.24	0.24	-0.29	0.56	-0.48	-0.11	-0.02	0.02	0.63	0.95	1.00			
13 PENSION	0.39	0.08	-0.08	-0.11	0.31	-0.26	0.00	0.19	0.04	0.19	0.19	0.16	1.00		
14 SECRECY	-0.64	-0.06	0.02	0.58	-0.88	0.92	-0.24	0.04	-0.36	-0.81	-0.54	-0.54	-0.29	1.00	
15 FOREIGN	-0.49	0.09	0.27	0.42	-0.53	0.38	-0.31	-0.13	-0.12	-0.57	-0.34	-0.26	-0.42	0.56	1.00