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The impact of non-commodity sovereign wealth funds' ownership on the domestic target firm performance

Hai Chi Nguyen[1] and Doan Thanh Nguyen[2]

Abstract: Previous research fails to investigate the impact of sovereign wealth funds (SWFs) on financial and non-financial performances of target firms. This study aims to fill the gap by using quantile regression technique on a sample of non-commodity SWFs and their target firms in five countries, namely France, Singapore, China, Malaysia and Vietnam. The research shows that non-commodity SWFs have a positive effect of increasing the financial performance for domestic target firms with relatively good performance. However, the SWFs have no significant impact on low-performing target businesses. The research findings imply that SWFs have limitations in management skills and experience and hesitate to invest in businesses with poor performance to avoid risks of bankruptcy and financial distress. The results show that the non-commodity SWFs tend to exert a negative impact on the non-financial performance of domestic target firms more strongly when the non-financial performance of the target firms is higher. Finally, these results indicate that SWFs are concerned with both financial and non-financial performances, and try to balance the two types of performance in an optimal way.

Subjects: Corporate Finance; Investment & Securities; Business; Management and Accounting

Keywords: financial performance; non-financial performance; non-commodity sovereign wealth fund; Vietnam; stakeholder theory

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PUBLIC INTEREST STATEMENT

Due to the expansion in the role of sovereign wealth funds as a fund management entity, we are interested in investigating their impact on the performance of the target firms. We use the data of target firms with different levels of non-commodity SWFs' ownership in five countries, namely France, Singapore, China, Malaysia and Vietnam, collected from Thomson Reuters Eikon from 2010-2018. We find that SWFs tend to improve the financial performance of target firms, which confirms the fact that non-commodity SWFs play an appropriate role in managing state funds. Furthermore, we find that non-commodity SWFs will opt for optimal strategies, i.e., they only increase social performance when it is low. This is a good strategy which ensures that the financial performance of the target firms is prioritized.

1. Introduction

Sovereign wealth funds (SWFs) have recently increased their presence as both global and domestic investors, contributing capital to firms. Different from other investment funds, SWFs are also a representative agent of the government, so there could be some tasks other than merely the management of state-owned funds. Nonetheless, in its capacity of a fund management agent, an SWF tends to be more financially efficient than state ownership (Kubo & Phan, 2019), but this outcome may require some trade-off between financial and non-financial performances.

Previous studies on the role of SWFs tend to revolve around financial performance because they are influenced by the assumption that these institutions manage capital on behalf of the state by making investments in target businesses (Kubo & Phan, 2019; Raymond, 2008; Kotter & Lel, 2011; Megginson et al., 2013; Bortolotti et al., 2015; Fernandes, 2009; Soji & Tham, 2011). Empirical evidence on financial performance suggests that SWFs do not always invest effectively, both in the short and long terms (Chhaochharia & Laeven, 2009; Estrin et al., 2009; Knill et al., 2012; Megginson & Netter, 2001; Park et al., 2018). Furthermore, different types of SWFs are prone to impose different impacts on financial performance (Gangi et al., 2019).

In short, studies on the impact of SWFs on target firm performance have yielded inconsistent, with some indicating positive results (Bortolotti et al., 2015; Chhaochharia & Laeven, 2009; Dewenter et al., 2010; Kotter & Lel, 2011), some negative results (Estrin et al., 2009; Megginson & Fotak, 2015; Megginson & Netter, 2001), or even statistically insignificant influences (Kotter & Lel, 2011). In addition, the impact in the long run is also different from that in the short term. Therefore, the impact of SWFs is quite complicated, possibly because the SWFs are not only meant for profit objectives but also for the purpose of enhancing social benefits of the country that provides funding for the respective SWF. With the inconclusive empirical results of SWFs effectiveness, it is necessary to give extra research effort in identifying the effectiveness of SWF performance.

An SWF may be more financially efficient than state ownership in general (Kubo & Phan, 2019), but this superiority may require trade-offs in terms of social benefits. Because SWFs are owned by governments, the assessment of the actual trade-offs between financial and non-financial performances will help to uncover important implications for the management of SWFs to ensure that social losses associated with improvements in SWFs financial performance will be kept to the minimum level. However, to date, there have been no studies on the examination of the influence of SWFs on the financial and nonfinancial performances of target firms.

Gangi et al. (2019) believe that different types of SWFs have diverse impacts on target firm performance. Furthermore, it is interesting to find out how SWFs prioritize between financial and non-financial performances. Even though SWFs may have concerns other than financial performance, previous literature tends to focus on financial indicators, so this trade-off has not received much attention. This study seeks to fill the above gap by examining the effectiveness of non-commodity SWFs, both financially and non-financially, through their investment in the target businesses. Furthermore, the research employs quantile regression technique to verify this trade-off relationship at different levels of financial and non-financial measures. This approach has its advantages in clarifying the priority of SWFs. The research proceeds with the discussion of the relevant literature on theories and empirical results and the establishment of hypotheses on the impact of SWF on firm performance. Then, the research methodology and empirical results are discussed, followed by the implications for relevant stakeholders.

2. Literature review and hypothesis development

2.1. Agency cost theory

In the context of SWFs, agent cost theory (Eisenhardt, 1989; Fama & Jensen, 1983) can be used to clarify the three principal–agent relationships. First of all, since the fund is owned by the state, the true SWFs owner is the citizens of the country that finances it. Citizens are therefore the actual

owners, while the asset management representatives are government officials, responsible for making the SWF as profitable as possible, sustaining state capital, and helping the economy.

However, because these government officials may not have the expertise to manage and operate the investment fund, they often hire professional managers to run an SWF. This leads to a second conflict between the owner and the representative: between SWF management and the person hired to operate the SWF. Finally, a conflict is likely to occur between SWF and the target enterprise receiving SWFs investment. In this third conflict, the investee company may have inefficient investment decisions due to the influence of SWF funding. Applying agency cost theory, control mechanisms are necessary to minimize those conflicts and increase the performance of SWFs.

For an entity, the complex types of conflict involved necessitate governance mechanisms for its operations (Arslan & Alqatan, 2020; Bonazzi & Islam, 2007). There should be appropriate governance mechanisms to reduce conflicts of interest between SWF directors and SWF owners, which should create an incentive for managers to work more efficiently. To avoid the conflicts mentioned, it is likely that the SWF will focus on financial performance, and the non-financial (social) performance will be the concern of other state agents.

2.2. Stakeholder management theory

The stakeholder theory links the importance of internal resources and external factors to various stakeholder groups and assesses the ability of these stakeholders in exerting pressure on an enterprise. These factors help managers pinpoint specific stakeholders that are critical to the organization's existence (Donaldson & Preston, 1995). Stakeholders can influence the organization's decision-making process and outcomes, and the organization's decisions and policies, in turn, can affect specific stakeholder groups (Clarkson, 1995).

Stakeholder management and decision-making vary between private companies and public agencies (Jurisch et al., 2013). In addition to growth and profitability, SWFs may have other assignments because their main goal is to improve the nation's economy. SWF is interested in six key stakeholders, among which are the government and the citizens in the host country (Al-Saidi, 2012). The management decision in the context of SWF should consider how the interests of these six stakeholders are taken into consideration. This criterion is conducive to the development of governance and transparency mechanisms.

Under the stakeholder theory, as an SWF is a state-dominated agency, there may be other goals besides seeking profits. Therefore, SWFs might have different priorities regarding the financial performance of target companies.

2.3. Empirical hypotheses

Previous studies on SWFs have made valuable contributions to theoretical and empirical fronts, pointing to the significant impact of SWF on target businesses, but there are mixed findings at best (Bortolotti et al., 2015; Dewenter et al., 2010; Knill et al., 2012; Kotter & Lel, 2011; Megginson & Fotak, 2015). Nonetheless, SWF-related works in the world are quite limited, especially those that are specialized in non-commodity SWFs. Furthermore, studies have shown inconsistent results on the impact of SWFs, but this impact is primarily limited to target businesses in general. There have been no studies examining the role of an SWF towards the firms residing in the country that owns the SWF, i.e., target domestic business.

Another issue that can affect the impact of SWFs on target firms' performance is the transparency level of the former. Highly transparent SWFs can remarkably affect the target company (Kotter & Lel, 2011). These SWFs are often organizations with governance structures geared towards addressing agency issues, aiding in improving investment efficiency. SWFs with high levels of transparency are expected to be not pursuing non-profit motives like SWFs with low transparency levels. Murtinu and

Scalera (2016) show that low transparent SWFs can make transnational investments indirectly through investment vehicles, while highly transparent SWFs tend to invest directly.

Bernstein et al. (2013) also argue that higher investment concentration in domestic firms is an indicator of poor diversification. It can be argued that firms that invest heavily in domestic firms may be more motivated to serve social goals, so their financial effectiveness may be reduced compared to SWFs investing abroad. In addition, state-owned enterprises with little investment experience could hesitate to invest in overseas enterprises (Murtinu & Scalera, 2016). If there are sparing opportunities to diversify investments, SWFs investing primarily in domestic enterprises are more likely to choose to reduce risks by opting for target companies with high quality and low insolvency risk.

There are a number of studies indicating a positive impact of SWFs on target firm performance, at least compared to general state agents (Bortolotti et al., 2015; Chhaochharia & Laeven, 2009; Dewenter et al., 2010; Knill et al., 2012). Chhaochharia and Laeven (2009) provide evidence indicating stronger tendency to make domestic investments for less transparent SWFs, consistent with the research of Kotter and Lel (2011).

To summarize, from the works of Bernstein et al. (2013), Kotter and Lel (2011), and Chhaochharia and Laeven (2009), it is highly likely that SWFs that focus on domestic firms have low transparency, and lack experience and skills for international investments. Therefore, it is expected that SWFs investing in domestic firms are still young and with little investment expertise, so they would choose businesses with high efficiency and low risk, to reduce the risk from poor portfolio diversification. Importantly, due to the limited investment management capacity and transparency, the impact of SWF on target enterprise performance is expected to be pronounced when the performance target business is very high, rather than very low. This is because SWFs may be a valuable shareholder that should contribute to improving its performance. On the other hand, high-performing firms can be established ones with proper operational procedures and governance structures, so the contribution of SWFs could be marginal.

In summary, the author formulates the following hypothesis:

Hypothesis 1: The impact of SWF on target firm financial performance is more positive in those with high financial performance.

Compared to public agencies in general, SWFs may be more interested in financial performance than non-financial one (Kubo & Phan, 2019). As a policy to resolve conflicts in the operations of SWFs, separating investment-related tasks from social tasks is increasingly evident in the management policy of the state. Compared to SWFs, general state agents and/or government-owned firms may have priorities other than profitability (Boycko et al., 1996; Dewenter & Malatesta, 2001; Krueger, 1990).

Due to financial performance concerns, SWFs are prone to seek to optimize their investment strategies. However, since the investments of an SWF can be partly directed by the government, caring for the interests of citizens may still be SWFs concerns (Alsweilem et al., 2015; Al-Saidi, 2012). Nonetheless, as an investment-specific vehicle of the government, SWFs still have to consider optimal trade-off between financial and non-financial performances. In order to improve the financial efficiency of the invested businesses, while minimizing the disadvantages to the well-being of citizens, it is suggested that SWFs can only intervene with firms that have excessive labor redundancy, or have too low wage, or pay too little tax. SWFs may also be concerned with non-financial performance, and they can improve it while limiting the negative impact of the trade-off between financial and non-financial performances of target firms. In other words, the impact of SWFs on non-financial performance should be more negative when the target enterprise has a relatively high level of non-financial performance. Therefore, the author puts forward hypothesis 2 as follows:

Hypothesis 2: The impact of SWF on non-financial performance is more negative in firms with high non-financial performance.

3. Research methodology

Following Fernandes ([2014](#)) and Gangi et al. ([2019](#)), the model of the current research is as follows:

$$Perf_{it+1} = \beta_0 + \beta_1 swf_{it} + \beta_2 size_{it} + \beta_3 lev_{it} + \beta_4 grow_{it} + \beta_5 cash\_asset_{it} + industrydum_i + countrydum_i + \varepsilon_{it}$$

And, the quantile model is as follows:

$$Q\tau(Perf_{it+1}) = \beta_0 + \beta_1 swf_{it} + \beta_2 size_{it} + \beta_3 lev_{it} + \beta_4 grow_{it} + \beta_5 cash\_asset_{it} + industrydum_i + countrydum_i + \varepsilon_{it}$$

where Perf is the dependent variable reflecting the target firm performance, measured by 3 indicators of financial performance (ROA, ROE, Price-to-book ratio—PTB) and 3 indicators of non-financial performance (Efftax—The ratio of tax expense to taxable income; Lnwage—The natural logarithm of the average wage of labor; D_emp—Change in total number of employees from year t-1 to year t). The variable of Perf's study period is t + 1 to mitigate the potential endogeneity due to the two-way relationship between the explanatory and dependent variables. $Q\tau(Perf_{it+1})$ is the regression function of τ-th quantile.

Swf is the ownership level of the non-commodity SWF in target firm i in year t (% of total shares). Size is a variable representing the economic scale of the target firm, measured by the natural log of the total assets of the target firm (Fernandes, [2014](#); Kotter & Lel, [2011](#)). Lev is the variable that represents the financial leverage of the target firm, measured as the ratio of total debt to total assets. ROA is a proxy for the profitability of the target business, measured as the ratio of net income to total assets (Fernandes, [2014](#)). Grow is a proxy for the target business's growth opportunities, measured by the ratio of the change in total revenue between year t and t-1 to revenue in year t-1. Cash_asset indicates cash held at the target firm, measured by the ratio of cash and cash equivalents to total assets (Kotter & Lel, [2011](#)). The characteristics of industry and country of the target firm are captured by the respective industry and country dummies.

The research employs a panel dataset on the financial characteristics and ownership of SWF in the target companies in the period 2008–2018. The author selected a sample of target firms that are listed in the above countries due to the need to investigate the impact of non-commodity SWFs' investment in domestic firms. Previous literature exerts little effort in differentiating the impact of different types of SWFs (Gangi et al., [2019](#)), especially on non-commodity ones. Not many countries have non-commodity SWFs, including Korea, Brazil, Malaysia, Singapore, Vietnam, China, France, Peru, Kazakhstan, New Zealand, India, Hong Kong, Palestine, Chile, Nigeria. Furthermore, as our interest is in those SWFs that have investment in domestic firms, we continue to filter and find that five countries, France, Malaysia, Singapore, China and Vietnam, have SWFs that match this criterion. We then retrieve all the listed firms from each of these five countries and peruse the ownership of the SWFs. Enterprises classified according to Thomson Reuters industry standards include: Basic Materials, Industrials, Consumer Cyclicals, Consumer Non-cyclicals, Energy, Financial, Healthcare, Technology, Telecommunications, and Utilities.

The author uses quantile regression which estimates the impact of factors (including SWF ownership) on the performance of the target firm at high and low levels of the dependent variable (Koenker, [2005](#); Koenker & Basset, [1978](#); Nguyen, [2020](#)). As the interest of our study is to evaluate the influence on the target company's performance at different levels of the target company's performance, rather than just at the average level as in other studies, quantile regression is highly relevant.

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The quantile regression method has the advantage over the least square regression (OLS) due to its ability to handle the abnormal (too high or too low) values of the dependent variable (Nguyen et al., 2017). Meanwhile, OLS regression only estimates the average impact of the explanatory variables on the dependent variable, so its ability is rather limited. The low percentile of the dependent variable in the model corresponds to the target company whose performance is low, and the high percentile means that the performance of the target company is high. To ascertain the results, the author applies robust standard errors for quantile regression following the procedure of Machado, Parente and Silva (2011).

4. Results and discussions

Table 1 shows the estimation results when the ROA is a dependent variable. The results show that SWFs have a positive and statistically significant effect at high percentiles of the dependent variable (from 50th to 90th percentiles). This result is consistent with the hypothesis that SWF tends to have a positive impact with highly efficient target firms as well as other studies such as Kubo and Phan (2019), because these enterprises are the preferred organizations, thus helping to increase the capital needed. This effect should be especially significant for companies in nascent markets, since receiving investments from SWFs helps remove financial constraints. Moreover, since SWFs can have a longer investment period than regular fund management companies (Blundell-Wignall et al., 2008), their capital contribution is stable, helping the target firms plan to exploit their investment opportunities. The positive impact of SWFs ownership on target firms' financial performance is in line with stakeholder theory, in the sense that the most important stakeholder is the government, which designates SWFs as the manager of state fund. This makes SWFs liable to the maintenance of financial performance, compared to the general governmental organizations, in line with Kubo and Phan (2019).

However, SWF ownership has no significant impact on performance for low-performing enterprises, suggesting that SWF does not have decent management experience and skills to revive businesses that are facing difficulties in upgrading performance. Studies such as Kotter and Lel (2011) and Bernstein et al. (2013) highlight the importance of highly transparent SWFs, such as Temasek Holdings. These are SWFs with robust investment experience, often selecting businesses with difficulties in order to improve the efficiency of these businesses in the future.

Table 1. Financial performance determinants—ROA					
Quantiles	**q10**	**q25**	**q50**	**q75**	**q90**
swf	0.012	0.016	0.037**	0.042**	0.039*
	(0.018)	(0.011)	(0.016)	(0.018)	(0.022)
size	0.020***	0.010***	0.005***	0.001	−0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
lev	−0.111***	−0.075***	−0.077***	−0.103***	***
	(0.012)	(0.005)	(0.004)	(0.005)	(0.007)
assetgr	0.000***	0.000***	0.000***	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
cash_asset	−0.022	0.002	0.038***	0.062***	0.107***
	(0.016)	(0.009)	(0.007)	(0.009)	(0.014)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	−0.482***	−0.309***	−0.064***	0.069***	0.227***
	(0.032)	(0.055)	(0.023)	(0.013)	(0.015)
No. of obs	28,680	28,680	28,680	28,680	28,680

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

Table 2 shows the estimation results when ROE is a dependent variable. The results show that SWFs have a positive and statistically significant effect at high percentiles of the dependent variable (from 50th to 75th percentiles). This result is again consistent with the hypothesis that SWF will only have a positive impact for high-performing target businesses, as these firms are the preferred organizations, thus aiding in the increase of resources needed for the business.

However, at the 90th percentile, the impact of SWF is no longer statistically significant, indicating that when the target enterprise has been extremely efficient (ROE is too high), the ability of SWF to continue to raise the performance bar is limited.

Also, SWF ownership has no significant impact on performance for low-performing enterprises, suggesting that SWF does not have enough management experience and skills to support businesses that are facing difficulties in uplifting performance.

Table 3 presents the estimation results when PTB is the dependent variable. The results this time show that SWF ownership has a positive impact on the financial performance of the target enterprise in all the five (from low to high) percentiles. However, at lower percentiles, the coefficient of ownership is smaller than at higher percentiles, consistent with the hypothesis that SWFs have a more positive effect on firms with better performance.

Because the coefficient of SWF is both positive and statistically significant at all the five percentiles, it suggests that stock market investors appreciate SWFs participation in the target business. This result is consistent with Kotter and Lel (2011), Megginson et al. (2013), and Fernandes (2014) on the impact of SWFs on the performance of target businesses. This result also shows the difference between the performance gauged by accounting and market measures: although the accounting performance does not improve in businesses with low ROA/ROE, the investment participation of SWFs is highly anticipated by investors in the market.

Table 4 shows the estimation when EFFTAX is a dependent variable. The results show that in general SWF ownership has a negative effect, reducing taxes paid to the government. This implies that SWFs tend to be more concerned with financial performance, rather than non-financial aspects.

Table 2. Financial performance determinants—ROE					
Quantiles	**q10**	**q25**	**q50**	**q75**	**q90**
swf	0.033	0.027	0.056**	0.05**	0.06
	(0.060)	(0.018)	(0.025)	(0.022)	(0.086)
size	0.039***	0.02***	0.011***	0.004***	−0.006***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
lev	−0.278***	−0.118***	−0.064***	−0.039***	0.026
	(0.028)	(0.011)	(0.008)	(0.011)	(0.017)
assetgr	0.000***	0.000***	0.000***	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
cash_asset	−0.010	−0.001	0.044***	0.091***	0.176***
	(0.023)	(0.014)	(0.010)	(0.017)	(0.023)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	−0.830***	−0.528***	−0.146***	0.063	0.318***
	(0.042)	(0.100)	(0.054)	(0.048)	(0.036)
No. of obs	28,313	28,313	28,313	28,313	28,313

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

Table 3. Financial performance determinants—PTB					
Quantiles	q10	q25	q50	q75	q90
swf	0.356**	0.664***	0.927***	1.346***	1.853**
	(0.140)	(0.130)	(0.187)	(0.477)	(0.826)
size	0.010	−0.008	−0.029***	−0.08***	−0.188***
	(0.007)	(0.007)	(0.009)	(0.014)	(0.030)
lev	−0.21***	−0.106**	−0.033	0.108	0.601**
	(0.051)	(0.045)	(0.060)	(0.124)	(0.283)
assetgr	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
cash_asset	0.32***	0.496***	0.906***	1.805***	3.82***
	(0.041)	(0.055)	(0.089)	(0.180)	(0.638)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	0.078	0.446***	0.835***	2.019***	3.867***
	(0.125)	(0.121)	(0.205)	(0.246)	(0.582)
No. of obs	27,681	27,681	27,681	27,681	27,681

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

Table 4. Non-financial performance determinants—EFFTAX					
Quantiles	q10	q25	q50	q75	q90
swf	−0.009	−0.07***	−0.05**	−0.032	−0.069***
	(0.021)	(0.022)	(0.023)	(0.027)	(0.016)
size	0.016***	0.013***	0.004***	−0.001	−0.008***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)
lev	−0.064***	−0.062***	0.007	0.053***	0.208***
	(0.013)	(0.015)	(0.009)	(0.009)	(0.024)
assetgr	0.000***	0.000*	0.000	0.000*	0.000***
	0.000	0.000	0.000	0.000	0.000
cash_asset	0.015	0.013	−0.002	−0.034***	−0.082***
	(0.014)	(0.013)	(0.008)	(0.008)	(0.017)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	−0.206***	−0.082**	0.149***	0.24***	0.357***
	(0.034)	(0.033)	(0.024)	(0.022)	(0.049)
No. of obs	23,329	23,329	23,329	23,329	23,329

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

Consistent with stakeholder theory, Kubo and Phan (2019) show that an SWF is more interested in financial performance compared to other state agents which may demonstrate higher concern about social performance.

In the 10th percentile (the lowest level), SWF ownership does not exert tax-reducing influence any-more, indicating that SWFs show social concerns to some extent. The negative effect of SWFs tends to increase at higher percentiles, implying that when target businesses pay high tax rates, SWFs are more

likely to have the tax liabilities shrinked. This result is in support of the argument that SWFs mainly focus on financial performance, through their tendency to cut down on tax expenses, to help retain the financial resources needed for continued reinvestments. In addition, this is an optimal investment strategy, balancing between financial and non-financial performances and ensuring that the government's tax revenue is less affected, as SWFs seek to avoid the target enterprise paying too much tax. In summary, the results in Table 4 are consistent with Hypothesis 2.

Table 5 shows the estimated results when D_EMP is a dependent variable. The results show that SWF ownership has the effect of reducing labor force at the 90th percentile (the highest percentile), which means that SWFs only reduce labor when the firm shows signs of hiring too many employees.

This result has 2 important implications. Firstly, SWFs are concerned about labor rights and exert no significant impact of reducing staff numbers when enterprises do not have high recruitment levels (percentiles below 90th). However, at the 90th percentile (or when the target firm recruits too many workers), SWFs have the effect of reducing redundant workers, to increase financial performance. Second, in terms of the number of employees, it can be argued that an SWF is concerned about the number of employees, and is willing to sacrifice financial performance to a certain extent. Specifically, SWFs have an insignificant impact of reducing personnel when the labor level is not too high). Therefore, this is the optimal investment strategy, striving to balance both financial and non-financial performances.

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

Table 6 shows the estimation results when LNWAGE is the dependent variable. Results showed that SWF ownership has a positive effect which is statistically significant at 10th, 25th, 50th and 75th percentiles, but it loses the statistical significance at the highest percentile. In addition, the coefficient of the SWF variable tends to decrease gradually when shifting from left to right, indicating that SWF is more likely to increase the average salary of employees when employees' wages are in the lowest brackets.

Table 5. Non-financial performance determinants—D_EMP					
Quantiles	q10	q25	q50	q75	q90
swf	−127.427	−36.927	−17.71	−166.474	−733.769 *
	(247.541)	(58.120)	(24.071)	(140.211)	(385.486)
size	−116.027 ***	−18.131 ***	14.555 ***	121.470 ***	394.967 ***
	(14.495)	(2.577)	(2.117)	(10.636)	(34.237)
lev	−106.113	−50.483 ***	−39.624 ***	−179.926 ***	−435.181 ***
	(65.688)	(13.490)	(9.587)	(37.045)	(140.859)
assetgr	0.089	0.007	0.013	−0.020	104.359 ***
	(0.092)	(0.017)	(0.022)	(0.039)	(1.337)
cash_asset	−63.300	−1.393	10.412 *	51.572 *	250.502 *
	(44.737)	(7.930)	(6.299)	(28.507)	(136.860)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	1861.432 ***	286.850 ***	−276.513 ***	−2.1e+03 ***	−6.8e+03 ***
	(535.805)	(60.962)	(42.643)	(215.044)	(779.604)
No. of obs	13,575	13,575	13,575	13,575	13,575

Table 6. Non-financial performance determinants—LNWAGE					
Quantiles	**q10**	**q25**	**q50**	**q75**	**q90**
swf	1.109**	1.026**	1.075***	0.701***	0.285
	(0.483)	(0.461)	(0.408)	(0.238)	(0.230)
size	0.024	***	0.031***	0.027***	0.025**
	(0.019)	(0.011)	(0.008)	(0.008)	(0.012)
lev	−0.407**	−0.469***	−0.292***	−0.197**	−0.245*
	(0.170)	(0.140)	(0.108)	(0.092)	(0.138)
assetgr	0.001**	0.000	0.000	0.001***	0.000***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
cash_asset	0.629***	0.646***	0.729***	0.798***	0.935***
	(0.165)	(0.110)	(0.089)	(0.107)	(0.131)
industry_dum	Yes	Yes	Yes	Yes	Yes
country_dum	Yes	Yes	Yes	Yes	Yes
year_dum	Yes	Yes	Yes	Yes	Yes
_cons	7.868***	8.518***	9.103***	9.529***	10.088***
	(0.588)	(0.276)	(0.216)	(0.219)	(0.271)
No. of obs	10,240	10,240	10,240	10,240	10,240

Source: Author's calculation from research data. *, **, *** denote significance at 10%, 5% and 1%.

This result again shows a high level of consistency with Hypothesis 2: the impact of SWFs is less positive when the firm has higher non-financial performance. This is a reasonable strategy, which is to raise financial performance, while ensuring the rights of employees.

5. Conclusions

Previous studies on the role of SWFs towards the performance of target firms offer mixed findings, suggesting that the impact of SWFs is complex, depending on the types of SWF and target firms. The extant studies have not considered the impact of non-commodity SWFs, and the performance of target firms has been analyzed without discriminating domestic and foreign ones. Because SWFs are owned by the host country's government, SWFs investments in domestic enterprises may originate from different motivations, compared to when SWFs invest in foreign target firms.

The objective of this study is to assess the impact of SWFs ownership on the financial and non-financial performances of SWF-invested firms in the host country. The study conducts a summary of relevant theoretical and empirical studies, then formulating hypotheses regarding the impact of SWFs on financial and non-financial performances of target firms. The research employs a panel dataset including the financial characteristics and ownership of SWF in the target companies in the period 2008–2018. The author uses quantile regression, the method in which the impact of factors on the performance of target firm is determined at high and low levels of the dependent variable, rather than only at the average level as in other studies.

The results from Table 1–3 about financial performance show that SWFs have the effect of increasing the financial efficiency for target firms with relatively good performance, consistent with hypothesis 1. SWF ownership has no significant impact for low-performing target businesses. It can be seen that SWFs have some limitations in management skills and experience, and hesitate to invest in businesses with low performance to avoid the risk of bankruptcy and financial distress. The results from Table 4–6 show that SWFs reduce the non-financial performance more when the non-financial efficiency of the target enterprise is higher, consistent with Hypothesis 2. Finally, these results imply that SWFs are concerned with both financial and non-financial performances.

The results from the present study imply that SWFs are government agents that are specialized in capital and investment managers. The positive impacts in Table 1–3 and results from trade-off in Table 4–6 suggest that these agents have higher interest in financial performance of the target firms, which is important and desirable. This finding indicates that the government could trust non-commodity SWFs in managing their country's public funds. Interestingly, one more implication from the study is that the well-being of the owners of non-commodity SWFs is protected by keeping the cost from the trade-off between financial and non-financial performances to the minimum level. SWFs in other countries could learn from this pattern in order to ensure the acceptance of their operations, i.e., improving financial performance without sacrificing social performance much. Furthermore (non-commodity) SWFs should improve their ability in raising the financial performance of firms with low performance, as these firms tend to receive little benefits from the investment of SWFs.

The research will benefit if further comparison could be made between non-commodity SWFs and other types of SWFs. This would clarify whether non-commodity SWFs behave differently in terms of their concerns for financial or non-financial performances. Also, future studies can analyze which factor of the SWFs could moderate or mediate the impact of SWF ownership on the performance of target firms.

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