ANALYSIS

More market, less control: an analysis of excess returns and agency loss if the norwegian oil fund invests in private equity

Should the Norwegian Oil Fund invest in private equity funds? Combining an extended CAPM-model with principal-agent theory, the thesis finds that the fund's long horizon and bargaining power leave only a marginal real excess return of about 0.65 percentage points. Against this stand structural costs of lost transparency and control, especially reputational risk and the inability to divest from locked-up capital, which make the case for expanding the investment universe insufficient.

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1. Introduction

In January 2026, the Expert Council for the Government Pension Fund Global (GPFG) published its report for 2025 with a recommendation to consider broader diversification across asset classes. The Expert Council, established by the Ministry of Finance, is tasked with providing professional advice on the fund's investment strategy, and in this context recommended considering whether the fund should open up for investments in unlisted equity (Ulltveit-Moe et al., 2026). The question of whether the GPFG should invest in such funds has been the subject of recurring debate. Norges Bank has on four previous occasions asked for permission to invest in this market, most recently in 2024, but the Ministry of Finance has so far postponed reaching a final assessment (Meld. St. 7, 2025–2026). The proposal concerns, in the first instance, entering as an investor in private equity funds; funds that trade in the unlisted market on behalf of investors. The unlisted market, better known as private equity, refers to trading in shares and securities that are not traded on an official and regulated exchange.

The debate has mainly been about return and risk. Less attention has been paid to what it means for the governance of the fund when money is tied up over a longer period, without the same opportunities for transparency and room for manoeuvre as in today's portfolio. These are costs that traditional financial economic models do not capture, but which are central when a fund with democratic foundations is to consider new forms of investment. The analysis in this thesis therefore attempts to answer the following question:

Is it profitable for the Oil Fund to invest in private equity funds, seen from the perspective of financial economic theory and political science principal-agent theory?

To answer this, I examine in this thesis the arguments for and against including private equity funds in the Oil Fund's investment universe, and include the costs that follow from expanding the investment universe in an investment model. First, the method section (3) presents the tools, assumptions and limitations of the analysis. The theory section (4) accounts for classical investment theory and previous research on private equity funds, as well as political science contributions on chains of delegation and principal-agent theory. The analysis (5) builds further on the theoretical foundation, and derives an investment model for the Oil Fund that includes both financial economic costs and the costs of losing transparency and democratic control over the investments.

As an investor, the Oil Fund is in principle well positioned to buy into private equity funds, because of its size, time horizon and capital structure. The challenge is not the return, but control; the unlisted market's lack of transparency and the lock-up of capital mean that one loses the ability to follow up the investments after they have been made. The analysis argues that this governance risk may be large enough that the financial economic gain is not a sufficient justification for the GPFG to expand its investment universe.

2. Background

The Government Pension Fund Global (GPFG), popularly known as the Oil Fund, is the world's largest state-owned investment fund, and manages Norway's petroleum revenues through foreign investments. The fund manages assets of approximately NOK 20,500 billion on behalf of the Norwegian population, and since it was established in the 1990s it has grown to become one of the largest actors in global capital markets (NBIM, 2026). The Oil Fund's mandate is that (1) the fund shall achieve the highest possible return with acceptable risk, and that (2) within this framework the fund shall be managed responsibly (Government Pension Fund Act, 2005, § 1). The Ministry of Finance has responsibility for the management, and the task is delegated to Norges Bank within the mandate. There is a set investment strategy through the benchmark index, which states that the fund shall consist of 70 per cent equities and 30 per cent bonds.

These are based on global indices and shall in this way roughly reflect the world economy (Ministry of Finance, 2024; Meld. St. 22, 2023–2024).

The unlisted market today makes up close to 10 per cent of the global equity market, and an ever larger share of the world's value creation takes place there (Meld. St., 2023–2024). If the fund is to follow its mandate and in practice be an index-near fund, this is an argument for also taking part in this market. NBIM points to a historical excess return of three to four percentage points over the listed market, and has expressed that opening up for investments in unlisted equities "is a natural further development of the fund's investment strategy" (Meld. St. 22, 2023–2024).

The question of whether the Oil Fund would be served by investing in private equity funds has so far mainly been treated as a financial economic question, where the answer depends on whether the expected excess return exceeds the costs of entering the market. When NBIM refers to historical excess return, it means the difference between the return in the unlisted market and the listed market, before adjusting for additional risk, locked-up capital and fee costs. Some financial theoretical models include such costs to find real excess return, but this approach is nevertheless insufficient to answer the question in its entirety. Financial economic models assume that all relevant costs can be priced and quantified, but the unlisted market's lack of transparency and reporting obligations gives rise to costs of an institutional and democratic nature that cannot be explained by such models. To identify these costs, political science principal-agent theory is a useful tool. Where financial economics explains what the Oil Fund can gain from investing in private equity funds, political science explains what the Norwegian population risks losing in terms of control and accountability. It is in the meeting between these two perspectives that the thesis's central argument is developed: an investment that is financially favourable can nevertheless be institutionally problematic.

3. Data and method

The thesis is a qualitative, theory-driven analysis that combines financial economic models with political science theory. I take as my starting point the return of the unlisted equity market from existing research in the field, together with NBIM's own reports, as a framework for the analysis. Furthermore, literature on delegation problems in parliamentary systems and instruments against agency loss from Kaare Strøm is used to identify the non-economic costs associated with the proposal (Strøm, 2000). Principal-agent theory is used in both economics and political science to analyse conflicts of interest and information asymmetry, where economic models typically capture such costs through fee structure and risk premiums. There are, however, costs of investing in the unlisted market that cannot be quantified in the same way, which I identify using Strøm's political science framework for chains of delegation in parliamentary systems.

3.1 Data on returns

There is disagreement in the literature about whether the expected return in private equity funds is higher than in the traditional equity market. This is due to some discretionary judgements when it comes to interpreting the same data, and how risk is priced. For example, Phalippou includes data from the 2000s in his analysis (Phalippou, 2023). Here the market underperformed compared with historical figures. Jenkinson is more selective in which time periods he examines, and more accepting than Phalippou when it comes to unrealised gains (Jenkinson et al., 2013). They thus reach different conclusions, where the latter concludes that private equity funds perform better than the listed market, and Phalippou concludes the opposite. Another problem is how systematic risk is weighted, which will depend on individual investments and the point in time at which the fund enters the market (Sorensen et al., 2014).

To resolve this, it is assumed that a real excess return exists in the unlisted market. When NBIM estimates an excess return from investing in the unlisted market compared with the listed market, they mean a nominal excess return. This disregards elevated risk and other financial costs. It makes the analysis more optimistic. If Phalippou is right and the excess return is in reality zero or negative, the entire justification for including private equity funds falls away already on financial economic grounds, and the institutional costs become irrelevant. The analysis

therefore carries NBIM's forecasts of excess return over to what I call real excess return, and shows that even with optimistic estimates, the costs associated with governance risk can be sufficient to weaken the proposal. The reader should therefore be aware that the conclusions of this thesis represent an optimistic choice of return, and that the uncertainty in the literature is in itself an argument for being cautious about expanding the investment universe.

3.2 Limitations

The literature-based method imposes certain limitations on the analysis. Several central sources, particularly NBIM, have a stated position in the debate on unlisted investments. This is handled by supplementing with independent research and by including practical comparisons with state funds. The reach of the conclusion will also be limited to the theoretical. The analysis derives an investment model that combines financial economic and political science considerations, which includes non-quantifiable costs associated with transparency and control. I therefore show that governance costs weaken the financial economic argument, but not by how much. The conclusion is therefore an argument for caution, not a final answer.

4. Theory

4.1 Traditional investment theory

The traditional capital asset pricing model (CAPM) is the starting point for analysing expected return (Berk et al., 2024):

$E[R_i] = r_f + \beta_i \times (E[R_{market}] - r_f)$

The model states that the expected return on an investment consists of two components. The first is the risk-free rate, r_f, which represents the return an investor can achieve without taking risk, typically measured by government bonds. The second is compensation for bearing market risk, measured as the product of an investment's sensitivity to market fluctuations, β_i, and the market premium (E[R_market] – r_f). To understand what these quantities really are, it is useful to distinguish between two types of risk. Unsystematic risk is specific to a single investment, for example the risk that a company goes bankrupt. This risk can be managed by spreading investments across several companies and markets. Systematic risk, on the other hand, is risk that follows from the market fluctuating as a whole, for example when a sharp interest rate increase hits all investments simultaneously. Since it is impossible to avoid such risk, investors demand compensation for bearing it. The market premium is the aggregate price of systematic risk in the market, the additional return investors have historically demanded for investing in a share instead of government bonds. β_i is individual for each investment, and measures how sensitive an investment is to systematic fluctuations.

The logic of the CAPM fits well with the Oil Fund's current portfolio, but problems arise when the model is to be transferred to private equity funds. Systematic risk will be higher in the unlisted market, due to larger fluctuations and the fact that companies that are not listed are as a rule in the start-up phase (Sorensen, 2014). This affects the second term. The model does, however, assume that all assets are tradable and that one can freely buy and sell from one's portfolios, and does not include fee costs to managers. These assumptions do not hold for investments in private equity funds, where capital is typically locked up for 7–12 years with no possibility of sale and where the managers are paid (Sorensen et al., 2014).

Morten Sorensen (2014) extends the CAPM to apply to private equity funds, and argues that the model shows the additional costs that are often ignored in traditional valuation models.

$E(r_{pe}) = r_f + \beta \times (r_m - r_f) + \lambda + C_{fees}$

Here it is the last two terms that represent what is unique about the unlisted market; the illiquidity premium (λ) and fee costs (C_fees). The illiquidity premium is the additional return investors demand for locking up their capital over a longer period, and fee costs are the share paid to managers, which typically amounts to a 2% annual management fee and a 20% share of

returns (Sørensen et al., 2014). When investors do not get back the money they have invested until after a long time, the return on the investments one could have made in the meantime is regarded as a cost. Døskeland and Strömberg, who have written reports commissioned by the Ministry of Finance, find that the average payment to fund managers lies between 5 and 7 per cent in total (Døskeland & Strömberg, 2023).

By rearranging the equation we can find alpha (α), which says to what extent the manager has delivered real excess return, defined more precisely than NBIM's estimates, namely beyond what can be explained by risk factors and compensation:

$$\alpha = r_{pe} - r_f - \beta(r_m - r_f) - \lambda - C_{fees}$$

Here the excess return, α, is what an investor earns from investing in private equity funds given risk, illiquidity and payment to managers. r_pe is the nominal return that private equity funds end up with, and α becomes the difference between this and the risk-free rate, the compensated market risk, the illiquidity cost and fee costs. If α is positive, it will be a valuable investment for an investor.

There is disagreement in the literature about whether private equity funds deliver consistent excess return in terms of Sorensen's definition, compared with the listed market (Sorensen et al., 2014; Kaplan et al., 2003; NBIM, 2023). Sorensen concludes in his analysis that many of the return measures of the investments are optimistic, and that when the costs of fund managers and higher risk are included, α on average approaches zero. This means that in reality one does not achieve real excess return as an investor (Sorensen et al., 2014).

The question that remains in purely economic terms is whether the GPFG can manage the hypothetical share of investments in private equity funds with positive α. In discussion notes from the fund itself, they assume a return 3 to 4 percentage points higher than the listed investments (NBIM, 2023). Kaplan and Schoar (2005) find in their research significant excess return in the unlisted market, while Sorensen shows that this has fallen over time and that a considerable part of the variation from the general market is due to random factors (Kaplan et al., 2003; Sorensen et al., 2014). This thesis regards it as likely that NBIM's own forecast is justified, and that investments in private equity funds will provide a real excess return after structural risk has been priced in, owing to the fund's advantages in the market as a large investor with a long time horizon.

4.2 Principal-agent theory

To concretise the costs of investing in private equity funds associated with transparency and control, the thesis takes principal-agent theory as its starting point. By looking at the conflict of interest between those who delegate responsibility and those who carry out the tasks in a parliamentary system, the analysis can identify the costs of extending the chain of delegation. Political science principal-agent theory describes situations where one party delegates decision-making authority to another party, and analyses the consequences of conflicts of interest and information asymmetry resulting from the agent's interests not coinciding perfectly with the principal's. The theory divides the concepts into two levels, where the original principal is the population, which grants authority through democratic elections and further delegation to various agents. At a lower level, principal-agent theory describes the relationship between one principal and one agent within each link of the chain of delegation (Strøm, 2000, pp. 261–262).

Kaare Strøm describes the chain of delegation in parliamentary democracies as a long series of mandates running from voters to political representatives, from legislators to the executive, from the executive to ministers, and from ministers to civil servants, the last agent. According to Strøm, an agent is accountable to its principal if the agent is obliged to act on the principal's behalf, and if the principal is entitled and able to punish or reward the agent (Strøm, 2000, pp. 264–270). This constitutes the theoretical preconditions for regimes being democratic, and in a parliamentary democracy the chain of delegation is characterised by the singularity principle; there is a single chain with various links between a principal and an agent, which springs from the original principal. Each agent is accountable to its respective principal, and in this way the chain of delegation allows the principal to make use of the expertise the agents have within the specific field in which they operate. The drawback is that agency loss can arise, through omission or action. If the agent does not act fully in accordance with the principal's interests,

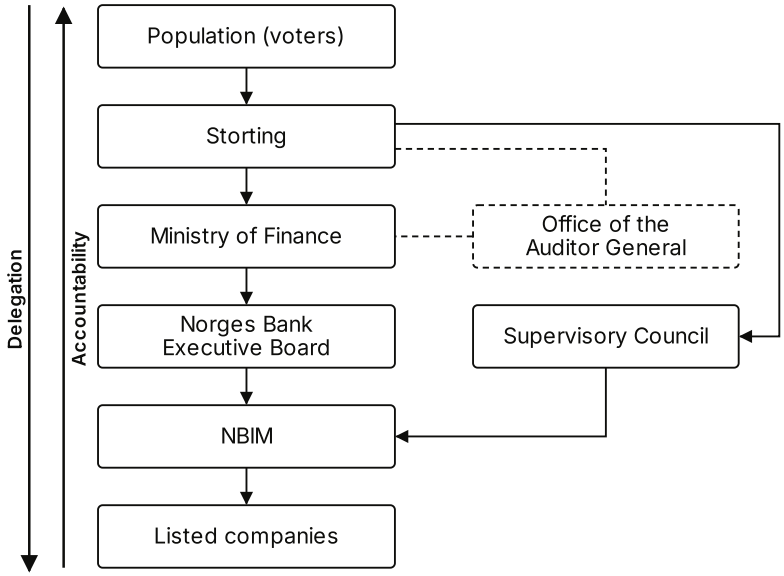
due to other goals or unavailable information, this loss arises. The agency loss becomes greater if there is hidden information with the agent that the principal does not know about, called adverse selection, or if the principal is unable to fully observe the agent's actions, called moral hazard. Strøm discusses how maintaining the singularity principle becomes more difficult the longer and more indirect the chain becomes. Due to the linear nature of the chain, with many agents descending from the original principal, the voters, fewer agents will be explicitly elected to their respective roles. This entails less room for controls and access to information after a task has been delegated (Strøm, 2000, pp. 272–274).

Strøm identifies four mechanisms the principal can use to limit agency loss: (1) contract design, (2) screening and selection, (3) monitoring and reporting, and (4) institutional checks. The first two are ex ante mechanisms, instruments for limiting agency loss before the principal and agent have entered into an agreement, and the last two are ex post mechanisms, instruments used after the agreement has been entered into. Strøm describes contract design as a way of handling conflicts of interest between links, typically by giving the agent a share of the principal's gain. Screening and selection is an attempt to distinguish between good and bad agents before the agreement is entered into, for example through internal recruitment and requirements for experience. Monitoring and reporting involves forcing the agent to share information with the principal, and examples of this are annual reports and question sessions. Strøm describes institutional checks as cases where it is possible for the principal to build in a veto, and these can for example be motions of no confidence or interventions by third parties. Strøm shows that parliamentary systems are structurally better suited to employing the ex ante mechanisms than the ex post mechanisms (Strøm, 2000, pp. 282–285).

4.3 The chain of delegation for the GPFG today

The chain of delegation from the population to Norges Bank Investment Management follows Strøm's ideal-typical parliamentary model, but with modifications in the form of overlapping mandates and control mechanisms. As shown in Figure 1, the chain of delegation runs from the voters to the Storting, on to the Ministry of Finance, Norges Bank's Executive Board, and finally NBIM as operational manager. The Supervisory Council, elected by the Storting, exercises independent supervision of Norges Bank's overall activities including NBIM, while the Office of the Auditor General audits the Ministry of Finance's exercise of its mandate responsibility. Norges Bank's Executive Board for its part delegates the management assignment to NBIM, and is accountable to the Ministry of Finance. NBIM manages the fund's assets within the framework of its mandate, primarily through investments in global equity and bond markets, as well as unlisted real estate (Government Pension Fund Act, 2005; Central Bank Act, 2019; Meld. St. 22, 2024–2025; Office of the Auditor General Act, ch. 5, 2024).

Figure 1: The chain of delegation from voters to investments today



Own figure.

In each link of the chain there are possible sources of agency loss that are relevant to the analysis. Between the voters and the Storting, representatives may prioritise short-term political goals at the expense of the fund's long-term return. Between the Storting and the Ministry of Finance, political considerations may influence the design of the mandate. Between the Ministry of Finance and Norges Bank, the mandate may be interpreted in ways that deviate from its intention. Between Norges Bank and NBIM, internal strategy and competence-building may deviate from the mandate's intended effect.

Nevertheless, the extent of agency loss in today's chain is limited by institutional safeguards such as the fiscal rule, the Supervisory Council's oversight and requirements for detailed public reporting, and the Office of the Auditor General's audits. An important point for the analysis is that divestment is always possible in today's portfolio, which makes the ex post mechanisms functional. It is precisely this property that disappears if the fund invests in private equity funds, and which the analysis will show is decisive for understanding the total costs that expanding the GPFG's investment universe would entail.

5. Analysis

5.1 Model for the Oil Fund's investments in private equity funds

The management of the GPFG differs from general financial economic theory because of its distinctive position as one of the largest funds in the world. I argue that there are three advantages the Oil Fund has compared with other actors: (1) a long time horizon, (2) continuous capital inflows and (3) bargaining power as a large investor. As a consequence of the fund's nature as a pension fund for future generations and the mandate of long-term return, together with the continuous capital flows resulting from returns and petroleum deposits, I contend that there is a distinction between the fund and other investors in that the illiquidity cost (λ) is close to negligible. To analyse the GPFG's specific situation, I extend the classical investment model and Sorensen's extension to adapt it to the Oil Fund. The cost for which other actors will demand compensation will be a form of gain for the GPFG. We use the extended CAPM for expected return in the unlisted market, and derive a new model to find the Oil Fund's excess return.

$E(r_{pe}) = r_f + \beta(r_m - r_f) + 0\ [\lambda \approx 0] - C_{fees}$

What remains is a simplified version of the requirement for excess return:

$\alpha \approx r_{pe} - r_f - \beta(r_m - r_f) - C_{fees}$

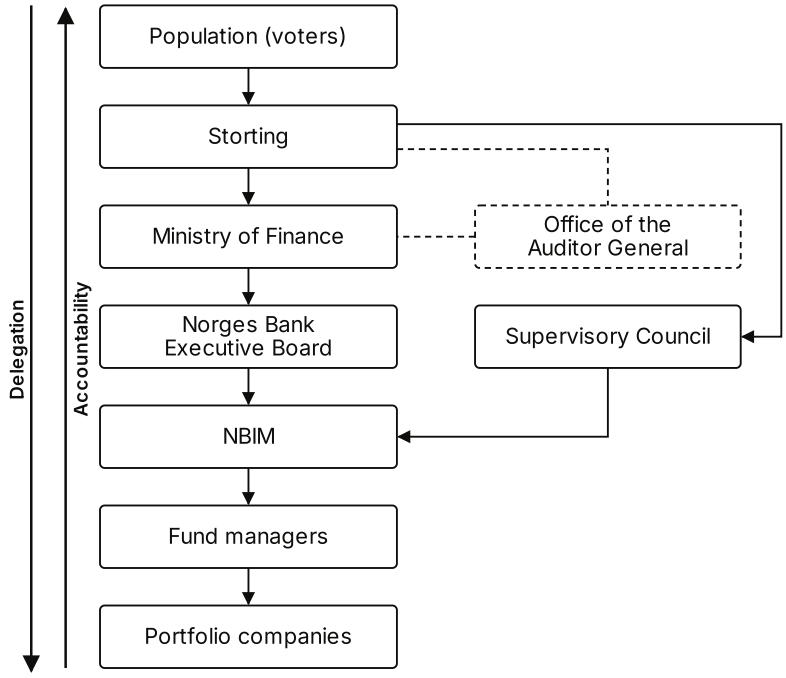
The excess return appears larger than for an average actor in the unlisted market, and is the difference between nominal return, fee costs and the opportunity cost of not investing in listed funds with equivalent risk. There will nevertheless probably be a cost from the loss of liquidity that is not economic, in that one has less room for manoeuvre to withdraw from investments that turn out to be unethical. I will include this as an agency loss later in the model. Døskeland and Strömberg write in a report to NBIM that funds comparable to the Oil Fund in practice pay between 3 and 5 per cent in fee costs (Døskeland & Strömberg, 2023). This indicates that the Oil Fund's size and credibility enable it to negotiate better terms than other actors. Furthermore, Sørensen finds in his research that, based on present-value calculations, the illiquidity cost of private equity funds makes up roughly 50 per cent of investors' total costs, which strengthens the argument that the Oil Fund is a considerably more suitable investor in the market than competitors if this cost is low (Sørensen, 2014).

One premise of the argument is that the stock market on the world market will not fall to a level that again makes us dependent on withdrawing more return than the fiscal rule implies, or that the deposits from petroleum revenues stop earlier than expected. This can be seen as a weakness of the model, but I regard it as highly unlikely that such a scenario could occur, given a fund value of just over NOK 20,300 billion, and that only an allocation of around 5 per cent would be invested in private equity funds (NBIM, 2026). I therefore argue that from a financial economic perspective, the Oil Fund is well positioned to invest in private equity funds.

5.2 The chain of delegation for the GPFG with a PE allocation

If the Oil Fund invests in private equity funds, the chain of delegation will be extended by one link, which reinforces the problems associated with principal-agent theory. The new chain will have an additional link from NBIM to the managers in the unlisted market, who in turn invest in external companies that are not listed, and these links will have considerable costs from the perspective of principal-agent theory, due to the unlisted market's lack of transparency, reporting and accessibility. The chain of delegation thus runs from the population as principal, to the agents the Storting, the Ministry of Finance, Norges Bank, NBIM, and managers.

Figure 2: The chain of delegation from voters to investments if the GPFG invests in private equity funds



Own figure.

If managers of private equity funds do not manage the investments in the way the principal, NBIM, or preceding principals wish, this will lead to agency loss. In the same way that insurance companies risk customers taking more risk after they have been insured, investors acting on behalf of the Oil Fund will have greater room for manoeuvre after they have been invested in. They may buy into dubious unlisted shares or sell out at a time that is destructive for societal value creation, but which provides short-term gain. The extended chain of delegation may in this way entail costs that will not appear in economic models.

The total agency loss that follows from extending the chain of delegation with managers of private equity funds can be formalised through the variable Γ. Based on principal-agent theory, I define Γ as the sum of four sub-variables, which capture different arguments for why the mechanisms against agency loss will be weakened:

$$\Gamma = \gamma_1 + \gamma_2 + \gamma_3 + \gamma_4$$

γ_1 is the transparency cost. Lack of transparency undermines Strøm's third mechanism, monitoring and reporting. In today's chain, the agency loss resulting from lack of insight into investments is limited by continuous market prices, standardised reporting obligations and auditing. In the unlisted market, unrealised values are set by the funds themselves, and information is classified as commercially sensitive. The ex post mechanisms are thus difficult to use. The transparency cost represents the additional cost the principal must bear as a result of this information deficit. The Oil Fund is today one of the most transparent state funds in the world, largely because of ex post mechanisms (Truman, 2007). This will probably not be compatible with the reporting practice in the unlisted market. Institutional checks from the Office of the Auditor General and the Supervisory Council presuppose continuous verifiability, and will consequently not be as effective if the GPFG includes private equity funds in its investment universe.

γ_2 is the manager selection cost. It is a cost associated with adverse selection in the choice of managers. In today's chain, screening is handled through internal recruitment processes and competence requirements within NBIM. Manager selection in the unlisted market thus undermines Strøm's second mechanism, screening and selection. For NBIM it is difficult to distinguish between competent and incompetent managers at external funds before an agreement has been entered into. The selection cost represents the cost of the screening mechanism being structurally weakened in this market. There is strong documentation of the gap between funds that deliver good results and poor ones, and that access to the best-performing private equity funds is limited (Kaplan et al., 2005). In addition, the dominant return measure in the unlisted market, the Internal Rate of Return (IRR), suffers from several weaknesses that make it poorly suited as a basis for comparison. IRR is the discount rate that makes the present value of all inflows and outflows equal to zero, and thus measures return relative to when the money actually comes back. This makes the measure vulnerable to manipulation. Managers have an incentive to bring forward early distributions to artificially increase IRR, and unrealised values are reported by the funds themselves (Berk et al., 2014). Ex ante screening will therefore be based on internal competence or publicly unreliable information, which counteracts the advantage the fund has in terms of size and bargaining power. It will end up as a cost in the form of weak results or the necessary building of internal competence.

γ_3 is the political risk cost and represents the reputational loss that arises when the principal loses control over which underlying companies are invested in. It undermines Strøm's third mechanism, institutional checks. In today's chain, NBIM operates within a mandate with a council on ethics and ongoing possibilities to withdraw ex post, so that institutional checks can be activated if investments conflict with the population's values. With managers of private equity funds as intermediaries, the fund may become associated with dubious investments without this being discovered in time. The risk cost thus represents the cost of the institutional control mechanism not fully covering the last link in the chain. Private equity funds that buy into start-ups have historically been associated with layoffs, tax evasion, and short-term value extraction. Compared with passive equity investments, which can still weaken the fund's reputation, the GPFG will to a greater extent be identified with the recipients of the investments in the unlisted market if something goes wrong (Døskeland & Strömberg, 2023).

γ_4 is the ethical legitimacy cost. It represents the structural paralysis that arises when the agency loss is not just difficult to observe, but impossible to correct within the investment period.

It further undermines institutional checks. While γ_3 describes the risk that something goes wrong, γ_4 describes the cost of the principal being unable to correct the error even after it has been uncovered, because the capital is locked up for seven to twelve years. This differs qualitatively from today's chain of delegation, where divestment is possible. The legitimacy cost thus represents the loss of the room for manoeuvre that in the theory section is a precondition for institutional checks to have their intended effect. The most obvious example is the Oil Fund's situation regarding investments involved in the conflict in Gaza. In 2023, the Oil Fund's ex post mechanisms meant that it withdrew from a number of investments considered problematic by the Council on Ethics, and it had the opportunity to do so because a listed equity portfolio is liquid (Meld. St. 22, 2024). If a corresponding case were to occur during an allocation in the unlisted market, divestment would take place under much lower liquidity and could lead to a legitimacy cost in that one cannot correct it early (Monk & Dixon, 2012).

Døskeland and Strömberg do, however, raise some objections that may counteract parts of the total agency loss derived in the model. The Oil Fund's size and role as a state pension fund give it the opportunity to sit on investor committees and demand access to information that an average investor will not be able to obtain (Døskeland & Strömberg, 2023). This could lead to more transparency, and γ_1 would be a smaller cost if insight can be negotiated even in the unlisted market. Another possible objection is that the selection cost of managers will over time approach being negligible, if internal competence is built up. γ_2 still describes the possible cost of building this competence, but will probably not be permanent. The costs associated with political risk (γ_3) and ethical legitimacy (γ_4), on the other hand, are harder to criticise. Reputational risk and paralysis cannot be negotiated away ex ante, and are structural properties of the unlisted market that are less possible to minimise. Therefore γ_3 and γ_4 are the decisive terms, and should be weighted heavily when deciding whether to take part in the unlisted market.

5.3 Comparable funds investing in private equity funds

The Canada Pension Plan Investment Board (CPPIB) writes in its reports that the annual net return over the last 10 years from the unlisted market has averaged 13.5 per cent. Unlisted equities make up 29 per cent of the fund's total portfolio, and consist of investments in private equity funds and direct investments in unlisted companies. In other words, the return is very good, and an illustrative point is that the fund's total average annual return of 8.3 per cent is approximately 2 percentage points higher than the GPFG's (CPPIB, 2025). Although the difference private equity funds make for the two funds cannot be isolated without a controlled analysis, it is consistent with NBIM's argument about expected excess return from expanding the investment universe.

The example of the Canadian pension fund can empirically substantiate the costs of extending the chain of delegation to managers. First, 26 per cent of the valuation of the investments in unlisted markets is based on the managers themselves (CPPIB, 2025). This is an empirical illustration of γ_1; the transparency problem is structural, and not even a large fund with experience and internal competence in unlisted markets can obtain a full overview of the investments.

The fund also writes in its 2025 annual report that the high return is due to comparative advantages resulting from long-standing partnerships and internal competence about the market. This shows that it is possible for the GPFG to handle the manager selection process, but that the cost captured by γ_2 is also real.

Furthermore, despite its climate commitments, CPPIB invested 3.3 billion dollars in new fossil investments in 2024, which according to the fund cannot be fully disclosed and traced to where they actually end up (Shift, 2025; CPPIB, 2025). This shows γ_3 and γ_4 in practice: the principal loses control over underlying investments, and the capital is locked up over an investment period that makes correction difficult.

Taken together, the CPPIB example illustrates that Γ is not a theoretical construct, but an empirical reality even for a fund that has been very successful as an investor in private equity funds. The decisive difference for the GPFG is that CPPIB operates at a greater arm's length

from political control than the Norwegian governance model allows, which I argue means that the agency loss, Γ, will structurally be greater for the GPFG than for CPPIB.

5.4 Complete model for the GPFG in private equity funds

By including the estimated agency loss from extending the chain of delegation through private equity funds, we obtain a more comprehensive investment model for the Oil Fund specifically in the unlisted equity market:

$$E(r_{pe}) = r_f + \beta(r_m - r_f) + C_{fees} + \Gamma$$

where

$$\Gamma = \gamma_1 + \gamma_2 + \gamma_3 + \gamma_4$$

This leaves an extended formula for real excess return:

$$\alpha \approx r_{pe} - r_f - \beta(r_m - r_f) - C_{fees} - \Gamma$$

For it to be worthwhile for the GPFG to invest in private equity funds, it consequently requires that:

$$\alpha > 0 \iff r_{pe} > r_f + \beta(r_m - r_f) + C_{fees} + \Gamma$$

The complete model shows that the Oil Fund's investment decision cannot be reduced to a purely financial economic question. On the one hand, the GPFG-adapted model shows that the fund is better positioned than most investors: the illiquidity premium λ is approximately zero due to the fund's time horizon and capital structure, and its bargaining power as a large investor can reduce C_fees below the market rate. To achieve real excess return, the expected nominal return r_pe must be greater than the sum of the risk-free rate, the market premium for the investments, the cost of the managers and the agency loss.

The model can give a picture of how uncertain profitability in the unlisted market is, by using estimates from the literature and CPPIB for the quantifiable quantities. Since a Norwegian government bond yields around 4 per cent, this is used as an approximation of the risk-free rate r_f (Norges Bank, 2025). The GPFG's historical market premium has been around 4.5 per cent over a ten-year period. With a conservative beta estimate of 1.3, in line with the empirical literature, this gives a risk-adjusted return requirement from market exposure of 5.85 per cent:

$$\beta(r_m - r_f) = 1.3 \times 4.5 = 5.85$$

(Phalippou, 2014; Ministry of Finance, 2026, Meld. St. 7, 2025–2026).

For fee costs, I take as a basis Døskeland and Strömberg's estimate of 5 to 7 per cent for ordinary investors, but illustratively set C_fees equal to 3 per cent, as the fund's size may give considerable bargaining power vis-à-vis managers (Døskeland & Strömberg, 2023).

As a measure of nominal return, CPPIB's ten-year average of 13.5 per cent for unlisted investments is used. This is consistent with NBIM's optimistic estimate of 4 per cent excess return over listed equities, since expected listed return can be understood as the sum of the risk-free rate and the market premium, and will be 8.5 per cent. Adding 4 percentage points of excess return from NBIM's reports gives a final nominal return of 12.5 per cent, which is only one percentage point away from CPPIB's return in the market.

On the other hand, Γ introduces a dimension that cannot be explained away. The analysis of the chain of delegation shows that all four sub-components are empirically supported and structurally anchored in the properties of the unlisted market, not in the fund's size or competence. The CPPIB example illustrates this: even a fund with a decade of experience, internal competence and distance from political control experiences the transparency problem (γ_1), selection costs (γ_2) and loss of control over underlying investments (γ_3 and γ_4) in practice.

Together, an illustrative calculation in per cent will look like this:

$$E(r_{pe}) = 4 + 5.85 + 3 - \Gamma$$

Real excess return becomes:

$\alpha \approx 13.5 - 4 - 5.85 - 3 - \Gamma$

$\alpha \approx 0.65 - \Gamma$

We see that if the Oil Fund invests in private equity funds, there will probably be a marginal return before agency loss has been weighted. What remains is the trade-off of whether the economic real excess return is worth the agency loss:

$\alpha > 0 \iff 0.65 > \Gamma$

The analytical contribution of the model is to show that γ_3 and γ_4 differ categorically from the other terms. Whereas γ_1 and γ_2 are costs that can be reduced over time through competence-building and contract design, γ_3 and γ_4 are structural properties of the unlisted market that cannot be negotiated away ex ante. The paralysis that follows from capital being locked up for seven to twelve years removes the very basis for institutional checks to have real effect, and it is this property that differs qualitatively from all links in the GPFG's existing chain of delegation, where divestment is always possible.

For the investment condition $\alpha > 0$ to hold, r_pe must exceed the sum of all cost terms, including Γ. While the financial economic terms are in principle quantifiable, Γ in its entirety is not. This is a limitation of the model, but also an important finding: the costs that are decisive for the decision are precisely those that cannot be priced in a financial model. The question of whether the GPFG should invest in private equity funds is thus not a question that financial economics alone can answer.

6. Conclusion

The analysis has examined whether the Government Pension Fund Global would be served by opening up for investments in private equity funds, assessed on the basis of financial economic return theory and agency loss. The financial economic analysis shows that the Oil Fund, compared with an average investor, is exceptionally well positioned in the unlisted market. The fund's long time horizon, continuous capital inflows and bargaining power as a large fund, I contend, mean that the illiquidity cost (λ) in practice approaches zero and that the fee costs (C_fees) become smaller. The adapted model for the GPFG thus suggests that real excess return (α) is more likely for the fund than for other actors, since the cost in reality is reduced to low fee costs and market risk. This is in line with Sørensen's analysis, which shows that the illiquidity cost makes up around 50 per cent of total investor costs in this market, a cost the Oil Fund does not have.

The analysis of the chain of delegation shows, however, that the institutional costs of investing in private equity funds are considerable. Through the variable Γ, the sum of the transparency cost (γ_1), manager selection cost (γ_2), political risk cost (γ_3) and ethical legitimacy cost (γ_4), the thesis has attempted to concretise non-economic costs that traditional financial models do not capture. These costs arise because an additional link in the chain of delegation weakens all four of Strøm's control mechanisms: contract design, screening, monitoring and institutional checks. The unlisted market's lack of transparency and reporting obligations makes ex post mechanisms difficult to use, and the capital locked up for seven to twelve years eliminates the possibility of divestment if problematic investments are uncovered.

For investment in private equity funds to be advantageous for the GPFG, the real excess return must be greater than zero, and the condition $\alpha \approx r_pe - r_f - \beta(r_m - r_f) - C_fees - \Gamma > 0$ must be satisfied. The thesis concludes that it is doubtful that this is the case. Although the Oil Fund's advantages suggest that the nominal return exceeds the costs associated with fees and market risk, the real excess return is marginal, and the size of Γ difficult to quantify. In particular the legitimacy cost γ_4, the loss of the room for manoeuvre that is a precondition for democratic control, represents a normative cost that cannot be compensated for by financial excess return alone.

The analysis's findings have theoretical significance, but the reach of the conclusion is limited by the fact that the extent of actual excess return and the size of the agency loss Γ must in practice be examined empirically. Before the Oil Fund possibly expands its investment universe to the unlisted market, the analysis argues for quantifying the institutional costs using empirical

data from comparable state funds, and assessing whether the room for control can be strengthened through new agreements with managers or regulatory reporting requirements that are not the norm today. The economic gain from investing in private equity funds is real, but appears marginal, and the costs associated with governance risk are structural and non-compensable. As long as the size of Γ cannot be quantified empirically, I argue that there is not a sufficient basis for expanding the investment universe. The example of the Canadian pension fund illustrates that investments in private equity funds will probably be incompatible with the Oil Fund's position as one of the world's most transparent state funds. This underlines that the question of whether the Oil Fund should invest in unlisted equities is not exclusively of a financial economic nature, but is fundamentally about what kind of management institution the Norwegian population wants the Oil Fund to be.

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