

**Corporate Governance in Mutual Funds:  
The Impact of Holdings Disclosure**

**EXTENDED ABSTRACT**

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## **Abstract**

Portfolio holdings disclosure has been a controversial issue for many years; SEC disclosure requirements in the US were relaxed from quarterly to semi-annual in 1985, then in 2004 returned to a quarterly mandate. Even today, some countries do not require holdings to be disclosed, and some are considering changing their laws to make it compulsory; New Zealand has made this change for KiwiSaver funds, and Australia is considering it. Further, in the US, there are current discussions about whether hedge funds should come under increased scrutiny, and be subject to more disclosure.

In the last few years there have been several papers examining various aspects of the impact of disclosure – front-running, copycat trading, and reporting lag, in addition to the simple return performance differential. Most of these studies have either examined the before and after 2004 SEC rule change, or compare SEC disclosure vs. another disclosure mechanism.

Our study examines the impact on fund return of disclosure in two ways. First, there are two markets where disclosure is not required but some funds choose to disclose – Australia and New Zealand. Second, in New Zealand in 2013 KiwiSaver funds became required to disclose top holding. The first affords us a natural experiment to compare funds that disclose with those that do not, and the second allows us to compare the same funds before and after the disclosure requirement.

Based on some preliminary examinations and an earlier version of this paper, we expect to find, contrary to arguments against disclosure, that returns are not harmed by disclosure.

JEL: G11 (Portfolio choice, investment decisions); G15 (International financial markets); G23 (non-bank financial institutions); G28 (Government policy & Regulation)

Keywords: disclosure, voluntary disclosure, mandatory disclosure, portfolio disclosure, portfolio holdings, fund performance, fund flows, front-running, agency cost, Australia, New Zealand

# Corporate Governance in Mutual Funds: The Impact of Holdings Disclosure

## 1. Introduction

The costs and benefits of the disclosure of portfolio holdings have been the focus of longstanding debate among practitioners, regulators, researchers and academics. Arguments supporting mandatory disclosure include the following: First, it provides information allowing investors, advisors and trustees to better monitor their investments delegated to professional fund managers. This would help with identification of overlaps in holdings which in turn can improve investors' asset allocation and diversification of their overall portfolios. Second, the transparency enables shareholders to monitor the compliance of a fund with its stated investment objectives, and to detect style drift. Third, disclosure enhances the ability to track whether funds are engaging in portfolio manipulation such as window-dressing or portfolio pumping.<sup>1</sup> Fourth, disclosure has the side effect of providing more extensive information in support of academic enquiry.

Arguments against portfolio disclosure include: it might enable increased front-running<sup>2</sup> by professional investors and speculators. Secondly, it could increase copycat investing (free-riding),<sup>3</sup> thus restricting a fund's ability to fully benefit from its research. Thirdly, there are direct costs associated with producing and distributing timely and accurate information.

Empirical research regarding the costs of disclosure regimes has investigated the free-riding of investors in the U.S. market by constructing copycat strategies. Frank, Poterba, Shackelford and Shoven (2004) find that disclosure is costly for funds, as copycat funds dilute the ability of the underlying fund to fully exploit their proprietary information. Verbeek and Wang (2010) find that the cost of disclosure is higher for increased disclosure frequency because copycat funds have more information on which to free-ride. Other research based on the U.S. market looks at the effect of disclosure on fund returns and finds that high-performing funds can have their performance impaired by disclosure (Ge and Zheng, 2006; Parida and Teo, 2010).

Academic interest in the area of disclosure of fund holdings was probably prompted by an announcement by the U.S. Securities and Exchange Commission that they would review disclosure requirements for the semi-annual and annual reports provided by mutual funds to their shareholders.<sup>4</sup> In a move toward increased transparency, holdings disclosure regulations were reformed in 2004 requiring funds report quarterly (within 60 days after the end of the reporting period) rather than the previous requirement of semi-annual reporting. Most of the studies directly about disclosure have centred on this regulatory change.

Studies on frequency of reporting have included Wermers (2001), Frank et al. (2004), Wermers, Yao and Zhao (2010), Ge and Zheng (2006), Verbeek and Wang (2010), Elton, Gruber, Blake, Krasny and

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<sup>1</sup> Portfolio pumping is the act of bidding up the value of a fund's holdings before the end of a reporting period in order to raise the fund's performance results.

<sup>2</sup> Front-running refers to the practice of outside investors buying (selling) securities in anticipation of buying (selling) trades by the fund.

<sup>3</sup> Free-riding occurs when outsiders are able to observe a fund's investment strategies, allowing them to either copy a fund's holdings or to adopt the investment strategies of the fund.

<sup>4</sup> See Paul F Royce, Director, Division of Investment Management, U.S. securities and Exchange Commission, "Remarks Before the Securities Law Procedures Conference [of the] Investment Company Institute," December 7, 1998, p. 3 ([www.sec.gov/news/speech/speecharchive/1998/spch238.htm](http://www.sec.gov/news/speech/speecharchive/1998/spch238.htm)).

Ozelge (2010), Parida and Teo (2010), and Agarwal, Mullally, Tang and Yang (2015). Following the implementation in 2004 of the requirement in the U.S. to disclose portfolio holdings on a quarterly basis, Ge and Zheng (2006) and Parida and Teo (2010) extend Wermer's (2001) study by performing qualitative examinations of the effects of the change in reporting frequency. Agarwal, Mullally, Tang and Yang (2015) examine the impact of this regulatory change on the liquidity of stocks and fund performance.

The literature examining copycat behaviour (or free-riding) includes Verbeek and Wang (2010), Frank et. al. (2004), Chen, Gallagher and Lee (2017). These studies have yielded mixed results, but there does seem to be evidence of post-fee abnormal performance for the copycat funds in the top-performing funds.

Brown and Schwarz (2011), Schwarz and Potter (2012), Shi (2010) and Aragon, Hertz and Shi (2013) are among those who examine front-running, generally finding that front-running is possible when funds disclose, but the evidence on efficacy is mixed.

This study examines a unique situation where disclosure is not mandatory<sup>5</sup>, but some funds choose to disclose. Australia and New Zealand are the only 2 countries of 25 surveyed in the biennial Morningstar Global Investor Experience<sup>6</sup> reports (2009-2015) which have not had compulsory disclosure requirements. Australia has not required holdings disclosure of fund managers (though is set to begin doing so in Dec 2017), and New Zealand only began requiring disclosure for a certain class of "KiwiSaver" funds (a government-sponsored voluntary retirement savings scheme) in late 2013. Throughout, however, in both Australia and New Zealand some fund managers have chosen to voluntarily disclose. This provides an opportunity to explore the impact of the choice of funds to voluntarily disclose, comparing the performance of funds that disclose to those that do not.

In addition, we now have enough data after the 2013 regulatory change in New Zealand, to examine before and after disclosure requirements for KiwiSaver funds. This is similar in concept to the studies examining the before and after increase of disclosure frequency in the USA, but we have an even more discrete change from no requirement at all to quarterly disclosure. Between these two techniques, we should be able to discern the potential effects of mandatory disclosure.

## 2. Motivation and Hypothesis Development

The primary purpose of this research is to assess the potential impact of a mandatory disclosure regulation on a fund's performance. However, due to the potential impact of endogeneity, it will also be important to examine what factors determine whether a fund discloses their holdings.

Given that the funds which choose to disclose are likely to be the funds which suffer least from disclosure, we can make some predictions about the characteristics of funds that voluntarily disclose. With

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<sup>5</sup> While this study focuses on the potential effects of mandatory disclosure, it does not examine other important facets of mandatory disclosure regulation such as the lag period allowed following the reporting period and the frequency of disclosure. For example, US regulations call for quarterly disclosure within 60 days of the end of the period.

<sup>6</sup> The biennial Morningstar reports rate (from D- to A) the mutual fund industries in various countries around the world (16 in the 2009 report, 25 in the 2015 report), along 4 dimensions – Regulation, Disclosure, Fees and expenses, Sales and Media. (in the original 2009 report, there were 6 dimensions: Investor protection, Transparency in prospectus and shareholder reports, Transparency in sales practices and media, Fees and expenses, Taxation, Distribution and choice)

Over most of these reports for Disclosure, Australia and New Zealand have ranked at or near the bottom of all countries with scores of D+ or D, and even D-. Finally in the 2015 report, NZ rose to C+. The New Zealand improvement in 2015 is almost certainly due to the KiwiSaver (Periodic Disclosure) Regulations 2013, almost immediately superseded by the Financial Markets (Repeals and Amendments) Act 2013. While these regulations only apply to a certain class of "KiwiSaver" funds (a government-sponsored voluntary retirement savings scheme), there is a possibility this will be extended eventually to all funds

regard to a fund's net assets having an effect on its disclosure choice, there are two theories. Funds with higher net assets could cause larger price movements when they buy and sell shares due to the larger scale of their trades. Investors engaged in front-running will therefore be more interested in funds with larger net assets, leaving large funds more exposed to front-running. This would create a disincentive for funds with higher net assets to disclose. On the other hand, the economies of scale enjoyed by large funds may mean that on a percentage basis the direct costs of disclosure may be less of a burden for larger funds. This in turn suggests that larger funds would be more likely to disclose.

In addition, funds with a high tracking error could be investing in assets outside of their stated objective and therefore may not choose to disclose holdings. Dyakov, Harford and Qiu (2017) find that funds with higher tracking error were less likely to disclose after the 2004 regulatory change in the US. The findings of Fowler, Grieves and Singleton (2010) offer evidence that New Zealand equity funds make investments outside of their investment objectives. They show funds which advertise that they invest in equities perform as if 16 to 33 percent of their funds were instead invested in fixed interest instruments.

Ge and Zheng (2006) and Parida and Teo (2010) identify one of the potential costs of disclosure as the "information effect". Disclosure of the securities which a fund holds exposes a fund's proprietary information to the public, as it exposes the identity of securities held by a fund. Disclosure limits the time frame over which fund managers are able to reap the benefits of their research, because other investors may use the disclosed holdings to anticipate future trades by the fund and trade on this information.

Another potential effect of disclosure is the "agency effect" (Ge & Zheng, 2006; Parida & Teo, 2010). More transparency could lessen agency costs by allowing regulators and investors to have more insight into fund activities; this would thus deter funds from engaging in activities that are not in the best interest of investors. On the other hand, Abramova, Core and Sutherland (2017) find – albeit at the firm level – that firms with a higher degree of institutional attention disclose more frequently, but with low-quality or inconsequential information.

The information effect suggests that disclosure may be negatively related to fund performance, while the agency hypothesis is just the opposite, having the effect of increasing returns. To investigate which effect is the most powerful, we categorise funds into high-rank, mid-rank and low-rank funds. (High-rank funds are the 20 percent of funds with the highest performance over the previous six months), and then compare the impact of disclosure on top vs. bottom ranked funds.

In line with Ge and Zheng (2006), we propose that high-rank funds have more proprietary information than the low-rank funds, therefore they will be harmed more by disclosure. The same may not be true for low-rank funds. Less monitoring by investors might allow the managers of poorly performing funds to indulge in value-destroying activities (e.g. to enhance bonus opportunities). The agency cost might outweigh some or all of the benefits accrued from less exposure to activities such as front-running or free-riding.

### **3. Data and Methodology**

#### **Data**

The data were obtained from the Morningstar database. To the best of our knowledge, this is the only database that records disclosed holdings of Australian and New Zealand funds. The Morningstar database records holdings that have been voluntarily disclosed proactively by the fund. Additionally, on an ad-hoc

basis, Morningstar makes holdings requests directly to selected funds. This introduces a potential bias, because we do not have information regarding for which funds holdings data were requested by Morningstar, and therefore, we do not know for which funds holdings were requested but declined. Despite this bias, the disclosed holdings reported by Morningstar is the most comprehensive record that is available in New Zealand and Australia to measure holdings disclosed to the public.

The final sample spans the period January 2003 to June 2017. Prior to 2005, Morningstar did not record portfolio holdings, but we include 2 years prior in order to have more “pre-disclose” comparisons. Where funds have multiple share classes, we only use the oldest, we exclude funds with less than 12 months returns, and exclude fund data in their first year of operation<sup>7</sup>. In our final samples, we have 3,368 Australian funds, 314 New Zealand funds, and 176 New Zealand KiwiSaver funds. Survivorship bias is eliminated, using data from both alive and dead funds.

Most of our data are reported monthly, but disclosure is generally only reported quarterly (and not always on the same quarterly cycle). So, we aggregate<sup>8</sup> all data on calendar quarters, and use these quarterly data in all our regressions.

## Methodology

Our analysis method follows that of Ge and Zheng (2006), but we add a few other considerations. In particular, we add tracking error, and as a robustness check we address endogeneity. For performance there are several “types” that can be assessed – raw return, active return (the difference between raw return and the benchmark return), and alpha (risk-adjusted return based on a risk model such as CAPM, Fama-French 3-factor model, or Carhart 4-factor)>

For active return or any of the alphas, the correct benchmark to use is the one specified by the fund, when there is one. In Morningstar, this benchmark is called the Primary Prospectus Benchmark. For all funds, Morningstar also identifies what they call the MPT benchmark<sup>9</sup>. For funds that have a specified benchmark (2211 in Australia, 101 in New Zealand, and 7 for KiwiSaver), the MPT benchmark is the same as the Primary for just 9 and 605 funds for New Zealand and Australia, respectively, and none for KiwiSaver funds. Some investors, especially institutional investors, are likely to have an internal benchmark they use in assessing mutual funds. We expect that the MPT benchmark is likely a good proxy for that “internal” benchmark for funds with no specified benchmark, but must be treated as a separate case rather than a simple substitution as the benchmark.

### Effect of Disclosure on Fund Returns

An OLS regression is used to analyse the characteristics of funds that voluntarily disclose. The regression equation is specified as follows:

$$\begin{aligned} Return_{i,t} = & \beta_0 + \beta_1 Lowrank_{i,t-1} + \beta_2 Highrank_{i,t-1} + \beta_3 Disc_{i,t-1} + \beta_4 TE_{i,t-1} + \beta_5 Stddev_{i,t-1} \\ & + \beta_6 Logtna_{i,t-1} + \beta_7 Logage_{i,t-1} \end{aligned}$$

<sup>7</sup> In the early months of a fund’s existence, we find the flow to be extremely volatile, making any inferences suspect at best.

<sup>8</sup> Sum, average, at least 1, or last - as appropriate for the data item

<sup>9</sup> Morningstar assigns a benchmark to a fund when it is added to the database by reviewing the fund’s holdings (if available) along with its investment objective. The benchmarks are reviewed on an intermittent basis by Morningstar and are updated if the benchmark has changed due to a modification in approach by the fund manager.

The dependant variable is either the Raw return, or the active return, defined as the return less the benchmark return during each quarter. The benchmark is the Primary or Morningstar Benchmark (discussed in the previous section). Active return is the difference between the fund return and benchmark return. In general, this is the fund's "outperformance", and obviously is sensitive to the choice of benchmark. Tracking Error (TE) is the standard deviation of the active return, and measures "how far away" the fund manager is away from the benchmark. This regression is estimated for the entire period, and for each of the Pre- and Post-GFC periods.

Discl = 1 if a fund provides quarterly disclosure during the quarter and zero otherwise. Lowrank, Highrank are dummy variables, each equal to one if a fund's adjusted performance for the quarter belongs to the bottom quintile and the top quintile respectively. It otherwise takes a value of zero. Past performance is calculated for each quarter based on the monthly return (as defined above) over the past 12 months.

Ge and Zheng (2006) and Parida and Teo (2010) use alternative measures of adjusted performance, such as Fama and French's (1993) three-factor abnormal returns and the Carhart (1997) four-factor abnormal returns, but these are not as applicable for our Australia and New Zealand data.

The control variables are Std dev, Logtna and Logage and have the same definition as in the previously-described logit model. The coefficient of interest is Discl. (we address endogeneity in a later step).

If disclosure frequency is determined by regulatory requirements exogenous to the fund, then a causal link between regulation and disclosure of could be expected. However, in this study the absence of regulation means that disclosure decisions are determined internally by the fund. Despite this, a statistical association between the two can still be expected (Ge & Zheng, 2006; Parida & Teo, 2006). In either case, the performance difference between the funds of different investment skills would provide empirical support for the potential effects of frequent disclosure.

### **Endogeneity**

One obvious potential problem is that of endogeneity, for both the impact of disclosure on returns, and impact on fund flow. We address this with the Heckman two-step procedure.

The equation for the probit analysis for characteristics of funds that disclose, is what we use for the Heckman treatment equation, but first we need to establish the possible reasons a fund might disclose.

### **Characteristics of Funds that Voluntarily Disclose**

Ge and Zheng (2006) identified size (measured as total net assets), age, risk (measured as standard deviation of returns) and expenses, as explanatory variables for probability of a fund disclosing. Past performance may impact a manager's decision to disclose, either due to a poor performer not wanting to reveal bad choices, or a top performer wanting to show off (or encourage people to buy those stocks and prop the price even more). We measure this with dummies for being in the Top Quintile or the Bottom Quintile.

Finally, for funds with a Primary benchmark, while SE of return is an appropriate measure of risk, it does not correctly measure how far a fund is from their benchmark. The standard deviation of the active returns (the difference between the fund return and the benchmark return), which is called the Tracking Error (TE), does just that. If a fund is very close to the benchmark (and is supposed to be), manager may feel he/she has little to lose by disclosing. On the other hand, a manager with a high TE may want to disclose to

show the holdings are not inappropriate. If so, that would probably be even more apparent after the GFC, when investors were more aware of fund abuses.

Similar to Ge and Zheng (2006), we use a probit regression to analyse the characteristics of funds that voluntarily disclose, to deal with the binary nature of the dependant variable. Our regression equation employed is:

$$\begin{aligned} Prob(Voluntary Disclosure_{it}) = F(\beta_0 + \beta_1 Ln(Assest)_{i,t-1} + \beta_2 Ln(Age)_{i,t-1} + \beta_3 SE(or TE)_{i,t-1} + \\ + \beta_5 TopQ_{i,t-1} + \beta_6 BotQ_{i,t-1} + \beta_7 Primary_{i,t-1} + \varepsilon_{i,t}) \end{aligned}$$

The dependant dummy variable, voluntary disclosure, is one if the fund provides at least one voluntary disclosure during each quarter and zero otherwise. Size is the natural logarithm of the total net assets at the end of each quarter. Age is the natural logarithm of the number of months since inception. SE or TE is as described above, where we use SE when examining raw returns, and TE when examining *active* returns. Ge and Zheng (2006) also included expenses, but for Australia and New Zealand we do not have data for historical expenses.

Ge and Zheng (2006) considered two additional independent variables that we could not include: turnover ratios and whether the fund was being investigated for fraud. Turnover ratios indicate how often a fund trades, and can be used as a proxy for the amount of private information possessed by a fund, assuming that trades are based on information. It would be interesting to use turnover ratios as a proxy to measure whether funds with more private information are less likely to voluntarily disclose their holdings. For Australia and New Zealand, those data are not available<sup>10</sup>. Similarly for fraud, the securities commissions in both Australia and New Zealand were unwilling to provide information about which funds are under investigation, so fraud could not be examined in this study.

## Results

Expected well before Christmas break.

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<sup>10</sup> With holdings we could calculate an estimate for turnover, but obviously could not do so as a comparison to those funds not disclosing. Further, for the Australia funds that do disclose, MS only reports their top 10 holdings, meaning a turnover estimation would be quite unreliable.

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