

MUTUAL FUND RESOURCE MOBILISATION AND PERFORMANCE – BEFORE AND DURING COVID-19

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Business / Covid-19



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ABSTRACT

This study provides an analysis of the flow of funds and the performance of top-performing mutual funds and index funds in the New Zealand mutual fund industry before and during Covid-19. The paper examines the initial impact of Covid-19 on resources mobilised and on the performance of mutual funds and index funds in New Zealand by using a variety of statistical tools. The empirical results exhibit that the impact of Covid-19 could be seen on the inflow of funds when the pandemic was declared as there was a sudden downfall in funds mobilised, breaking the increasing trend of previous years. However, the drop was not dramatic and the funds deployed in the mutual fund industry continued to rise again in the next quarter. Findings related to the performance of selected mutual fund schemes reveal that there was a tremendous fall in the average return and performance of funds in March 2020, indicating the impact of Covid-19, but the returns increased in the next quarter with funds starting to perform above the selected benchmark. The study reveals that although the pandemic led to an initial decrease in the performance of selected mutual funds, investors continued to make investments, indicating ample trust in managed fund companies and sustainability in the mutual fund industry.

KEYWORDS

mutual fund industry, risk–return analysis, performance evaluation, funds mobilised, Covid-19

INTRODUCTION

There was a widespread panic across the global financial markets when the World Health Organization (WHO) declared Covid-19 a pandemic. Zhang et al. (2020) reported a substantial increase in volatility in global markets. Goodell and Huynh (2020) studied the US industry-level market reactions, which led to an increase in risk in the US in the face of the Covid-19 pandemic and Covid-related news announcements. Yarovaya et al. (2020) analysed the response of various investments, such as equity, bonds, precious metals and cryptocurrency markets, to the Covid-19 shock, and concluded that there were different patterns of reaction and recovery across different asset classes and within each class of asset. Rizvi et al. (2020) reported that there has been a change in investment styles of fund managers and mutual funds' performance in the EU during the Covid-19 outbreak.

Although the New Zealand mutual fund market is one of the smallest markets in the world, and the number of mutual fund schemes in New Zealand is below international averages, there was a downfall in the performance of mutual funds in New Zealand during Covid-19. This paper explores this further and investigates the performance of mutual funds and resource mobilisation in the mutual fund industry in New Zealand before and during Covid-19.

LITERATURE REVIEW

Studies relating to mutual fund performance

The majority of early studies on mutual funds assessed funds based on the return they provided to investors. It was not until the 1960s that the portfolio theory was developed, and quantification of risk was carried out, and since

then various studies have been undertaken that have evaluated the performance of funds not only in terms of rate of return but also in terms of risk-adjusted rate of return.

Treynor and Sharpe measured the performance of various mutual funds based on risk. Sharpe (1966) used total risk to evaluate the performance of mutual funds. He used a statistical technique that has a multi-index model which states that the return of a portfolio is linearly related to a series of factors, and concluded that mutual fund performance is inferior to market performance when expenses related to mutual funds are taken into consideration. Treynor (1965) gave a framework of measuring risk, mainly systematic risk, to evaluate the performance of equity funds and gave an index, termed as a reward to volatility ratio. The higher value of Treynor's ratio indicates better performance of a mutual fund.

Henriksson (1984) based his study on market timing. He took a sample of 116 open-ended investment schemes and evaluated their performance. He reported that the fund managers had unsatisfactory market-timing skills while making investments. Fama and French (1992) studied the cross-sectional variation in average stock returns in relation to size, leverage, book-to-market equity, earning-price ratios and market beta. They found that the relation between market beta and average returns is flat when the tests allow for variation in market beta that is unrelated to size.

Ferson and Schadt (1996) developed a model to understand the performance of mutual funds. They suggested that the excess returns are associated with three variables: benchmark market index; lagged dividend yield; and lagged Treasury bill rate. Zheng (1999), in his study on the performance of mutual funds, found that the mutual fund portfolios that receive more money perform better than the ones that lose money.

Carhart (1997) found that there was no persistence in the performance of mutual funds in the long term. Further, lowest decile funds were poor performers for a continuous period of time. His study supported Hendricks et al.'s (1993) results of a short-term persistence in stock returns. Grinblatt and Titman (1989) studied the holdings of various mutual funds to determine the performance of the funds. They found that correct choices made by mutual fund managers, especially in growth funds, resulted in positive returns. Carhart (1997) reported that there is a difference in the performance of various funds because of their relative size and value. Chan et al. (2002) found in their study that mutual fund companies while making investments adopt those positions that are close to the index. Those who take positions away from the market benchmark are the ones who favour growth stocks or the ones who have emerged as winners in the past. There is evidence that growth managers outperform value managers.

Studies relating to mutual fund flows and stock market returns

Warther (1995) examined the relationship between funds mobilised by mutual funds and security returns. He propounded that fund inflows and returns are highly correlated. Potter (1996) studied the relationship between returns and fund flows of different categories of mutual funds. He used Garner causality tests and provided the evidence that stock returns can be used to predict flows into growth funds but this does not apply to income funds. Gruenstein et al. (1997) also undertook a study to examine the effects of market returns and flow of funds. Unlike Warther, they used instrumental variables to examine the effects of market returns on aggregate fund flows. They concluded that equity fund flows were not affected by stock returns and the bond funds were affected by the bond returns. Fortune (1998) used VAR models and monthly data for the period January 1984 to December 1996 in order to study the relationship between the flow of funds and market returns, and propounded that there is a positive relationship between the two. Edwards and Zhang (1998) also examined the relationship between monthly bond flows and monthly bond returns. They propounded that the amount of money that flows in stocks and bonds is significantly affected by market returns. Lynch and Musto (2000) found evidence of less flow of funds in mutual fund schemes when the past return of funds is lower and past returns contain less information useful to the future performance of funds. Oh and Parwada (2007) and Cha and Kim (2010) found, in their respective studies, that flow of funds reacts strongly to changes in market returns of the previous day. Quereshi et al. (2019) found a correlation relationship between mutual fund flows and market returns due to macroeconomic information. They found a bi-directional causality between stock-market returns and mutual fund flows. Jank (2012) suggested a

positive relationship between equity mutual fund flows and stock-market return that is explained by a response to macroeconomic news. He concluded that mutual funds are forward looking and contribute to real economic activity.

Studies on the effect of Covid-19 on the economy

There have been a few academic studies recently on how Covid-19 has affected the economy and capital markets all across the globe. Ramelli and Wagner (2020), in their studies, concluded that there was an initial reaction in financial markets to Covid-19 in March 2020 but later the markets adjusted. Gormsen and Koijen (2020), and Pagano et al. (2020), found, in their respective studies, that the risk level of all countries increased when Covid-19 spread to more than 200 locations. Beck et al. (2020) and Gopinath (2020), in their studies, observed how the economy responded to changes in policies during Covid-19 that helped in mitigating risk during crises. Boone (2020) and McKibben and Fernando (2020) studied the economic repercussions of the spread of coronavirus and the appropriate policy response, and concluded that an outbreak could impact the global economy in the short run. Elgin et al. (2020) and Nicola et al. (2020) examined the ways in which the introduction of new policies by governments helped in slowing down the impact of Covid-19. Pastor and Vorsatz (2020) concluded that investors retain their commitment to sustainability during major financial crises.

Studies on mutual funds in New Zealand

Studies on the mutual fund industry and performance in New Zealand are few. Boustridge and Young (1996), in their study, found that selecting funds on the basis of past performance does not guarantee a good performance in the future. They examined the risk-adjusted performance of New Zealand funds from 1989 to 1995 using the Sharpe ratio, and concluded that more than 80% of funds underperformed their benchmarks. Vos et al. (1995) studied 14 New Zealand and Australian equity funds from 1988 to 1994 and found there was no short-term persistence in mutual funds in New Zealand. Bennett and Young (2000), in their paper on determinants of mutual fund flows in the New Zealand market, found there was a negative relationship between equity-fund flows and short-term interest rates and exchange rates.

Disclosures from the literature review

There have been studies on the performance and flow of funds in the mutual fund industry during Covid-19, but most of the studies have been done in the developed markets. The studies so far have focused on the performance of mutual funds and the impact of Covid-19 on financial markets all over the world and governments' response to it, but none of the studies has discussed the impact of Covid-19 on the New Zealand mutual fund industry. The purpose of this study is to investigate the total funds that have been mobilised in the mutual fund industry and to compare the performance of selected mutual fund schemes before and during Covid-19 in New Zealand.

OBJECTIVES

Based on the gaps identified, the following objectives have been underlined in this study:

1. To analyse the trend of resource mobilisation in the mutual fund industry in New Zealand before and during Covid-19.
2. To compare the flow of funds deployed by various sources in the mutual fund industry before and during Covid-19.
3. To compare the performance of selected mutual fund schemes before and during Covid-19.
4. To compare the performance of selected mutual fund schemes before and during Covid-19 with the selected benchmark.

HYPOTHESES

On the basis of the stated objectives, the following hypotheses were tested:

- H₁: There is no significant difference between the flow of funds before and during Covid-19
- H₂: There is a significant difference between the flow of funds before and during Covid-19
- H₃: There is no significant difference between the returns of mutual fund schemes before and during Covid-19
- H₄: There is a significant difference between the returns of mutual fund schemes before and during Covid-19
- H₅: There is no significant difference between the Sharpe ratio of selected mutual fund schemes before and during Covid-19
- H₆: There is a significant difference between the Sharpe ratio of selected mutual fund schemes before and during Covid-19

DATA AND METHODOLOGY

Data

The data for the study was collected through various secondary sources which include the Reserve Bank of New Zealand (RBNZ) and websites Morningstar, MSCI (Morgan Stanley Capital International) and InvestNow.

For the first part of the analysis, that is, to determine trends in resource mobilisation in the New Zealand mutual fund industry, a period of seven years has been selected, from June 2014 to March 2021. For the second part of the analysis, the sample consists of top-performing mutual funds and index funds in New Zealand published on InvestNow. The range of funds selected includes high-performing New Zealand funds from various sectors including international equities, Australasian equities, property and diversified. Based on the data availability, the number of funds selected in each quarter has been stated for each quarter. Quarterly returns are taken after fees and before tax.

The MSCI World Index is taken as the benchmark index. The MSCI World Index is an equity index of 23 developed markets that represents large and mid-cap equity performance. Quarterly returns are taken that represent the index's cumulative return from 3-month prior end date to current date.

To make comparisons between the flows of funds before Covid-19 and during Covid-19, to examine trends in individual investors and wholesale funds in the mutual fund industry, and to analyse the performance of mutual funds, ten quarters of data have been taken, five before and five during Covid-19. The first period is from December 2018 to December 2019 and the second period is from March 2020 to March 2021. The second period incorporates the flows and returns from mutual fund schemes when Covid-19 was at its peak in March 2020.

Methodology

The return and risk of the selected mutual fund schemes have been calculated using different statistical tools. As annual return cannot be solely used to evaluate the performance of different mutual funds, other empirical tools like standard deviation, comparison against a benchmark and Sharpe ratio have been used. Standard deviation determines the risk and volatility in a mutual fund scheme, whereas Sharpe ratio and comparison with the benchmark are calculated to validate performance results of various mutual fund schemes.

Empirical tools used

Returns – Returns, after fees and taxes, have been taken for the purpose of analysis. These represent the reward for selecting an investment. Usually, the higher the return, the higher the preference for that investment.

Standard deviation – Standard deviation is used to measure the overall risk. It quantifies the total dispersion of data. The higher the deviation, the greater the difference of values that make up its means. Lower standard deviation maintains data homogeneity. Higher standard deviation indicates higher risk and volatility in the expected returns.

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{1}{n-1} \{Rp(t) - Rp\}}$$

where:

- $Rp(t)$ return on fund scheme
- Rp Mean rate of return on net asset value (NAV) of mutual fund

Sharpe ratio – Sharpe ratio is an important measure that evaluates the return that a fund has generated relative to the risk taken. Risk here is measured by standard deviation and Treasury Bill (Primary) Yield is taken from the RBNZ website, as the risk-free rate of return to calculate the Sharpe ratio.

The formula to calculate the Sharpe ratio is:

$$\text{Sharpe ratio} = \frac{(Rp - Rf)}{\sigma}$$

where:

- Rp return on mutual fund
- Rf risk-free rate of return
- σ standard deviation of MF

The 90-day Treasury Bill is taken as the risk-free rate. The Sharpe ratio gauges the connection between the portfolio's extra return over risk-free return and total risk, which is estimated in terms of standard deviation. A high Sharpe proportion shows the positive and superior risk-adjusted performance of the fund over the market, while a low Sharpe proportion proposes that the asset returns are lower than the market. The model assesses the fund based on returns per unit of risk.

T-test – To test a hypothesis, a t-test has been used to compare means and determine whether the means are statistically different or similar to each other. The t-value is compared to the t-critical value to attest null hypothesis. If the value of the t statistic is less than the t-critical value, the null hypothesis is accepted, which states that the means of the sample are similar to each other.

P-value, or probability value, is another variable to attest null hypothesis. If the p-value is greater than the alpha level or level of significance selected, the null hypothesis is accepted, or otherwise rejected. Further, if the t statistic value is large in absolute value, the p-value will be small, and vice versa.

EMPIRICAL RESULTS

Presentation of results proceeds as follows. First, the trend of resources mobilised in the mutual fund industry from June 2014 to March 2021 in New Zealand is shown in Figure 1. Comparison of flow of funds from various sources before and during Covid-19 is presented in Table 1. Table 2 shows the flow of funds in the mutual fund industry in New Zealand before and during Covid-19. Table 3 captures the performance of mutual funds before and during Covid-19. Table 4 shows statistics for the sample of New Zealand growth mutual funds, based on whether the fund managed to beat the MSCI World Index return.

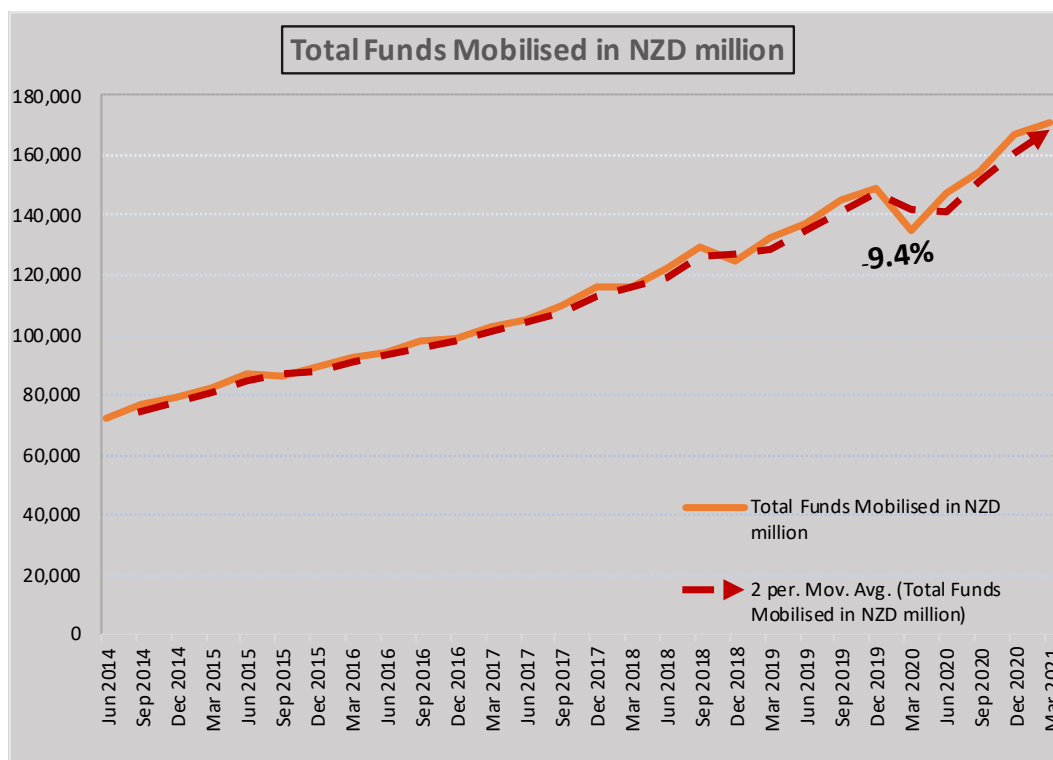


Figure 1: The trend of resources mobilised in the mutual fund industry from June 2014 to March 2021.

Trend analysis

Moving average trendline is used to show the trend of the flow of funds with period set to 2. As seen in Figure 1, the moving average trendline has smoothed out fluctuations and has captured the aggregate movement of trend. We can see that there has been a steady increase in the funds mobilised between June 2014 and December 2020. The gross mobilisation of mutual funds was \$72,371 million in June 2014 and \$170,849 million in March 2021, showing an increase of 136% in seven years. There has been a break in the growth trend by 9.4% in the total funds mobilised in March 2020 from December 2019, showing the sudden impact of COVID-19 on total funds invested in the mutual fund industry. There has been an upward trend after the March 2020 dip, with an increase in investments in the mutual fund industry by 26.4% in March 2021 from March 2020. Overall, the trend is bullish, showing an increase in the flow of funds in the mutual fund industry.

Flow of funds from various sources before and during Covid-19

	Before Covid-19					During Covid-19			
	Total managed funds	Wholesale managed funds	Individual managed funds	Overseas managed funds		Total managed funds	Wholesale managed funds	Individual managed funds	Overseas managed funds
Dec 2018	-4.15	-3.8	-4.69	-2.22	Mar 2020	-9.40	-8.5	-12.5	0.40
Mar 2019	6.4	6.9	6.4	4.3	June 2020	9.32	9.33	17.5	-2.18
June 2019	3.77	4.04	4.2	16.2	Sep 2020	4.56	4.4	6.6	1

Before Covid-19					During Covid-19				
Sep 2019	5.58	5.34	3.8	4.5	Dec 2020	7.94	3.7	9.4	8.3
Dec 2019	2.82	3.38	3.3	22.4	Mar 2021	2.4	3.9	2.3	6.2

Table 1: Comparison of percentage change in flow of funds from various sources before and during Covid-19.

Before Covid-19

As seen in Table 1, there was an increasing trend in the consolidated assets of managed funds from December 2018 to December 2019. The increasing trend can be seen in various categories of the managed fund industry from December 2014 to December 2019, with total managed funds changing from -4.14% in December 2018 to 2.82% in December 2019. Wholesale managed funds, individual managed funds and overseas managed funds all show an increasing trend and upward movement, with an increase in flow of funds from negative in December 2018 to positives of 3.38%, 3.3% and 22.4% respectively in December 2019.

During Covid-19

There is a fall in the total invested funds in the mutual fund industry in March 2020, with total managed funds falling by 9.40%, wholesale managed funds falling by 8.5%, individual managed funds by 12.5% and overseas managed funds by 0.40%. Interestingly, investor confidence was restored quickly, with the next quarter showing an increase in the fund flows from all sources except overseas managed funds. In June 2020, total managed funds increased by 9.32%, individual managed funds by 17.5% and wholesale managed funds by 9.33%. The only dip was in overseas managed funds, which fell by 2.18%. There has been a positive change throughout after March 2020 in the flow of funds from the previous quarter.

Hypothesis testing

- H_1 : There is no significant difference between the flow of funds before and during Covid-19
- H_2 : There is a significant difference between the flow of funds before and during Covid-19

Before Covid-19 (NZD million)		During Covid-19 (NZD million)	
	Total managed funds		Total managed funds
Dec 2018	124,394	Mar 2020	135,100
Mar 2019	132,361	June 2020	147,695
June 2019	137,356	Sep 2020	154,440
Sep 2019	145,030	Dec 2020	166,730
Dec 2019	149,122	Mar 2021	170,849

Table 2: Total flow of funds in the New Zealand mutual fund industry before and during Covid-19.

T-test result: T-test results show $t = 8.33$, $p = 0.0011$, which is less than the significance value of 0.05. Hence, the alternate hypothesis is accepted and it can be concluded that there is a significant difference between the flow of funds before Covid-19 and during Covid-19.

Performance evaluation of selected schemes

Before Covid-19					During Covid-19				
	N	Mean %	SD	Sharpe ratio		N	Mean %	SD	Sharpe ratio
Dec 2018	93	-7.06	6.1	-148.1	Mar 2020	132	-12.84	8	-159.4
Mar 2019	99	8.4	4.1	159.02	Jun 2020	141	11.18	6.8	160.29
Jun 2019	102	4.5	2.7	107.4	Sep 2020	145	4.44	5.5	75.27
Sep 2019	119	3.84	2.6	103.4	Dec 2020	149	8.53	9.1	90.87
Dec 2019	129	1.98	3.1	24.19	Mar 2021	149	2.41	2.08	40.78
Average		2.33	3.72	49.1	Average		2.74	6.29	41.5

Table 3. Comparative analysis of percentage quarterly mean returns, standard deviations (SD) and Sharpe ratio of a sample of mutual fund schemes before and during Covid-19. N represents the number of mutual fund schemes taken in the sample in each quarter.

Returns

Table 3 summarises the returns of the selected growth schemes for two periods, before and during Covid-19. Returns from mutual funds dropped suddenly when the pandemic was declared, with negative mean returns of -12.84% in March 2020. After March 2020, there was a positive trend, with June 2020 showing a high positive mean return of 11.18%. The average mean returns before and during Covid-19 are comparable, with 2.3% before Covid-19 and 2.74% during Covid-19.

Risk and volatility

The second analysis is to determine the risk and volatility in mutual funds, which have increased when 2020 is taken into consideration. The March 2020 standard deviation increased to 8% from 3.1% in December 2019, and to 9.1% by December 2020. The average standard deviation increased from 3.7% before Covid-19 to 6.2% during Covid-19. According to the table, one can clearly see that standard deviation, which measures risk and volatility in expected returns, increased by 1.5 times from December 2019 to March 2020, indicating that the unsystematic risk of selected mutual fund schemes rose during Covid-19.

Sharpe ratio

The Sharpe ratio determines the excess return a mutual fund earns over the risk-free return per unit of risk, which is the standard deviation. A higher and positive Sharpe ratio shows good performance. According to Table 3, except for December 2018, the Sharpe ratio had been positive in the pre-Covid-19 period. However, the Sharpe ratio started declining in March 2020, indicating a drastic impact from Covid-19 on mutual fund performance. There was a sudden drop in the Sharpe ratio, which fell to a negative value of -159% in March 2020. The schemes recovered in the next quarter with a tremendous increase in the Sharpe ratio in June 2020 to 160%. The average Sharpe ratio was higher before Covid-19 (49%) than it was during Covid-19 (41.5%).

Hypothesis testing

- H_3 : There is no significant difference between the returns of funds before and during Covid-19
- H_4 : There is a significant difference between the returns of funds before and during Covid-19

T-test result: T-test results show $t = 2.33$, $p = 0.827$, which is greater than the specified level of significance of 0.05. Hence, null hypothesis is accepted and it can be concluded that average returns from the selected managed funds before and during Covid-19 are similar to each other.

Hypothesis testing

- H_5 : There is no significant difference between the Sharpe ratio of selected mutual fund schemes before and during Covid-19
- H_6 : There is a significant difference between the Sharpe ratio of selected mutual fund schemes before and during Covid-19

T-test result: T-test results show $t = 0.94$, $p = 0.39$, which is greater than the specified alpha of 0.05. Therefore, null hypothesis is accepted and there is strong evidence to conclude that the Sharpe ratios from selected managed funds before and during Covid-19 are similar to each other.

Comparison of mutual funds with the MSCI World Index

Before Covid-19					During Covid-19				
	MSCI World Index (%)	Mean (%)	Below MSCI (%)	Above MSCI (%)		MSCI World Index (%)	Mean (%)	Below MSCI (%)	Above MSCI (%)
Dec 2018	-13.7	-7.06	17	77	Mar 2020	-21.4	-12.8	12	88
Mar 2019	3.9	8.4	27	73	June 2020	18.8	11.1	87	13
June 2019	0.6	4.5	0.1	99	Sep 2020	7.52	4.4	81	19
Sep 2019	0.08	3.8	5	95	Dec 2020	13.6	8.5	43	57
Dec 2019	8.1	1.9	50	50	Mar 2021	4.52	2.4	63	37

Table 4. The percentage quarterly mean returns for the sample of New Zealand mutual funds and comparisons with the MSCI World Index. 'Below' represents the percentage of schemes performing below the MSCI World Index and 'Above' represents the percentage of schemes performing above the MSCI World Index.

In general, mutual fund schemes performed well in the pre-Covid-19 periods. As shown in Table 4, most of the selected funds have been performing above the MSCI Index before Covid-19 as compared to during Covid-19. An interesting finding was that 88% of selected schemes outperformed the benchmark in March 2020, when the pandemic was announced. After that, the performance of mutual funds declined, with 87% and 80% of them performing below the MSCI benchmark in the following two quarters, that is, June 2020 and September 2020 respectively. A bit of recovery occurred in December 2020, with 57% of funds outperforming the benchmark. Nevertheless, performance decreased in the following quarter with 63% of schemes performing below the benchmark in March 2021

ANALYSIS AND DISCUSSION

This study shows that resource mobilisation in the mutual fund industry and the performance of growth mutual fund schemes is market sensitive. The main findings of the research are four-fold.

First, there was a shock impact of Covid-19 in the New Zealand mutual fund industry, with a decrease in the flow of money in the mutual fund industry and a downturn in the performance of mutual funds in March 2020. This indicates the initial effect of the news of the pandemic on resources mobilised and returns. The results are consistent with those of other researchers, arguing that Covid-19 has triggered a severe pandemic leading to an initial economic slowdown, which is in support of studies done by Gormsen and Kojien (2020), and Zhang et al. (2020).

Second, the mutual fund market showed a reaction to Covid-19 with a fall in investments in March 2020 in the short run, but soon recovered in the next quarter, in June 2020. Findings show signs of recovery in June 2020, with an increase in investments from various sources of mutual funds. This is in line with the findings of Ramelli and Wagner (2020).

Third, the flow of funds in the mutual fund industry in June 2020 and high performance by funds in the quarter immediately after the pandemic were seen to indicate the trust of investors in financial markets. This is in line with the studies carried out by Zhang et al. (2020), Elgin et al. (2020), Nicola et al. (2020) and Gopinath (2020), which all found that stated governments and central banks across the world were able to restore investor confidence.

Fourth, there is strong evidence of an increase in resources mobilised in the mutual fund industry during Covid-19. The study of trends in flow of funds in the mutual fund industry from various sources proves that investment in the mutual fund industry has been increasing during Covid-19, and even the poor performance of mutual fund schemes in March 2020 during the pandemic did not deter investors from investing in mutual fund schemes in June 2020. Assets under managed funds, individual investors and overseas investors have contributed a sizeable amount of funds to the mutual fund industry during Covid-19. There was an initial dip in the funds mobilised, which shows the impact of Covid-19, but the recovery in the next quarter indicates investors remained committed and sustainable during the financial crisis. This supports the findings of a study done by Pastor and Vorsatz (2020), who propounded the trust of investors during financial crises.

CONCLUSION

Despite the decrease in the flow of funds and the poor performance of mutual funds in March 2020 due to the shock effects caused by Covid-19 in New Zealand, the capital market experienced a rise in resources mobilised. Continued investment in mutual fund schemes during this time demonstrates the confidence of investors in future earnings of the funds and their faith in financial markets.

The research findings indicate investors should continue investing in mutual fund schemes. However, they should take a cautious approach by continually reviewing their portfolios and investing in diversified portfolios to minimise risk and maximise returns.

SCOPE AND LIMITATIONS

The study was limited to the performance of high-performing mutual funds and index funds in New Zealand. The study could be extended to other categories of mutual fund schemes. The comparison between before and during Covid-19 has only been done for five quarters, and extending the time period would offer a more realistic comparison and capture the long-term perspective.

REFERENCES

- Beck, T., Flynn, B., & Homanen, M. (2020, July 22). *Covid-19 in emerging markets: Firm-survey evidence*. VOX^{EU}, CEPR. <https://voxeu.org/article/covid-19-emerging-markets-firm-survey-evidence>
- Bennett, A., & M. Young. (2000). *Determinants of mutual fund flows: Evidence from New Zealand* (Discussion Paper). PACAP/FMA Meeting, Melbourne, Australia.
- Boone, L. (2020). *Tackling the fallout from COVID-19*. In R. Baldwin & B. Weder di Mauro (Eds.), *Economics in the time of COVID-19* (pp. 37–44). CEPR Press.
- Boustridge, P., & Young, M. (1996). *An appraisal of managed funds performance for NZ registered funds using Sharpe's style analysis* (Massey University Working Paper. WP 96.2). Massey University.
- Carhart, M. (1997). On persistence in mutual fund performance. *The Journal of Finance*, 52, 57–82. <https://doi.org/10.1111/j.1540-6261.1997.tb03808.x>
- Cha, H. J., & Kim, J. (2010). Stock returns and aggregate mutual fund flows: A system approach. *Applied Financial Economics*, 20(19), 1493–1498. <https://doi.org/10.1080/09603107.2010.508714>
- Chan, L. K. C., Chen, H-L., & Lakonishok, J. (2002). On mutual fund investment styles. *Review of Financial Studies*, 15(5), 1407–1437. <https://doi.org/10.1093/rfs/15.5.1407>
- Daniel, K., Grinblatt, M., Titman, S., & Wermers, R. (2012). Measuring mutual fund performance with characteristic-based benchmarks. *The Journal of Finance*, 52(3), 1035–1108. <https://doi.org/10.1111/j.1540-6261.1997.tb02724.x>
- Edwards, F., & X. Zhang. (1998). Mutual funds and stock and bond market stability. *Journal of Financial Services Research*, 13, 257–282.
- Elgin, C., Basbug, G., & Yalaman, A. (2020, May 7). *Economic policy responses to a pandemic: Developing the COVID-19 economic stimulus index*. VOX^{EU}, CEPR. <https://voxeu.org/article/economic-policy-responses-pandemic-covid-19-economic-stimulus-index>
- Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47(2), 427–465. <https://doi.org/10.2307/2329112>
- Ferson, W., & Schadt, R. (1996). Measuring fund strategy and performance in changing economic conditions. *The Journal of Finance*, 51, 425–461.
- Fortune, P. (1998). Mutual funds, part II: Fund flows and security returns. *New England Economic Review*, 3–22.
- Goodell, J. W., & Huynh, T. L. D. (2020). Did congress trade ahead? Considering the reaction of U.S. industries to COVID-19. *Finance Research Letters*, 36, 101578. <https://doi.org/10.1016/j.frl.2020.101578>
- Gopinath, G. (2020). Limiting the economic fallout of the coronavirus with large, targeted policies. In R. Baldwin & B. Weder di Mauro (Eds.), *Mitigating the COVID crises: Act fast and do whatever it takes* (pp. 41–48). CEPR Press.
- Gormsen, N., & Koijen, R. S. (2020). *Coronavirus: Impact on stock prices and growth expectations* (Working paper). National Bureau of Economic Research. <https://doi.org/10.3386/w27387>
- Grinblatt, M., & Titman, S. (1989). Mutual fund performance: An analysis of quarterly portfolio holdings. *The Journal of Business*, 62(3), 393–416. <https://doi.org/10.1086/296468>
- Gruenstein, D., Kleiman, P., & Remolona, E. M. (1997). Market returns and mutual fund flows. *Economic policy review* (Vol. 3) (pp. 33–52). Federal Reserve Bank of New York.
- Hendricks, D., Patel, J., & Zeckhauser, R. (1993). Hot hands in mutual funds: Short-run persistence of performance, 1974–88. *The Journal of Finance*, 48(1), 93–130. <https://doi.org/10.1111/j.1540-6261.1993.tb04703.x>
- Henriksson, R. D. (1984). Market timing and mutual fund performance: An empirical investigation. *The Journal of Business*, 57, 73–96. <http://dx.doi.org/10.1086/296225>
- InvestNow. (n.d.). <https://investnow.co.nz/resources/performance/>
- Jank, S. (2012). Mutual fund flows, expected returns, and the real economy. *Journal of Banking & Finance*, 36(11), 3060–3070. <https://doi.org/10.1016/j.jbankfin.2012.07.004>
- Lynch, A., & Musto, D. K. (2000). How investors interpret past fund returns. *SSRN*. <https://doi.org/10.2139/ssrn.219006>
- McKibbin, W. J., & Fernando, R. (2020). The global macroeconomic impacts of COVID-19: Seven scenarios. CAMA Working Paper No. 19/2020. *SSRN*. <https://doi.org/10.2139/ssrn.3547729>

- Morningstar. (n.d). <https://www.morningstar.com>
- MSCI. (n.d). *MSCI developed markets indexes*. <https://www.msci.com/developed-markets>
- Nicola, M., Alsaifi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78, 185–193. <https://doi.org/10.1016/j.ijvs.2020.04.018>
- Oh, N. Y., & Parwada, J. T.(2007). Relations between mutual fund flows and stock market returns in Korea. *Journal of International Financial Markets, Institutions and Money*, 17(2), 140–151.
- Pagano, M., Wagner, C., & Zechner, J. (2020). *Disaster resilience and asset prices*. CSEF Working Papers 563. Centre for Studies in Economics and Finance.
- Pastor, L., & Vorsatz, M. B. (2020). *Mutual fund performance and flows during the COVID-19 crisis*. Working Paper 27551. National Bureau of Economic Research. <https://doi.org/10.3386/w27551>
- Potter, M. (1996). *The dynamic relationship between security returns and mutual fund flows* [Unpublished PhD dissertation]. University of Massachusetts Amherst.
- Qureshi, F., Kutan, A. M., Ghafoor, A., & Hussain Khan, H. (2019). Dynamics of mutual funds and stock markets in Asian developing economies. *Journal of Asian Economics*, 65(C).
- Ramelli, S., & Wagner, A. F. (2020). Feverish stock price reactions to COVID-19. *The Review of Corporate Finance Studies*, 9(3), 622–655. <https://doi.org/10.1093/rcfs/cfaa012>
- Reserve Bank of New Zealand Te Pūtea Matua. (n.d.). <https://www.rbnz.govt.nz>
- Rizvi, S. K. A., Mirza, N., Naqvi, B., & Rahat, B. (2020). Covid-19 and asset management in EU: A preliminary assessment of performance and investment styles. *Journal of Asset Management*, 21, 281–291. <https://doi.org/10.1057/s41260-020-00172-3>
- Sharpe, W. F. (1966). Mutual fund performance. *The Journal of Business*, 39(1), 119. <https://doi.org/10.1086/294846>
- Sorted Smart Investor. (n.d.). <https://www.smartinvestor.sorted.org.nz>
- Treynor, J. L. (1965). How to rate management of investment funds. *Harvard Business Review*, 43(1), 63–75.
- Vos, E., Brown, P., & Christie, S.(1995). A test of persistence in the performance of NZ and Australian equity mutual funds. *Accounting Research Journal*, 8(2), 19–34.
- Warther, V. A. (1995). Aggregate mutual fund flows and security returns. *Journal of Financial Economics*, 39(2–3), 209–235. [https://doi.org/10.1016/0304-405x\(95\)00827-2](https://doi.org/10.1016/0304-405x(95)00827-2)
- Yarovaya, L., Matkovskyy, R., & Jalan, A. (2020). The effects of a “black swan” event (COVID-19) on herding behavior in cryptocurrency markets: Evidence from cryptocurrency USD, EUR, JPY and KRW markets. *SSRN*. <https://doi.org/10.2139/ssrn.3586511>
- Zhang, D., Hu, M., & Ji, Q. (2020). Financial markets under the global pandemic of COVID-19. *Finance Research Letters*, 36. <https://doi.org/10.1016/j.frl.2020.101528>
- Zheng, L. (1999). Is money smart? A study of mutual fund investors’ fund selection ability. *The Journal of Finance*, 54(3), 901–933. <https://doi.org/10.1111/0022-1082.00131>

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