

# PERFORMANCE COMPARISON OF THE LAPIS CORE PORTFOLIO VERSUS MULTI-ASSET INVESTMENT FUNDS (SUMMARY)



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## 1 Introduction

Since the introduction of passive fund products, there have been discussions as to whether active or passive strategies should be preferred. In particular, the so-called excess return, Jensen's alpha is under discussion. In addition, the Sharpe ratio is used in practice as an alternative to Jensen's alpha. Empirical studies have repeatedly demonstrated that the probability of outperforming the market through active management is low. This statement also corresponds to the view of Lapis Asset Management Ltd. (hereinafter referred to as Lapis), an asset management company for private and institutional investors with registered offices in Lugano, which relies fully on passively managed funds in its Lapis Core Portfolio strategy.

For this reason, this thesis compares the passive investment strategy of the Lapis Core Portfolio with actively managed Swiss multi-asset investment funds.

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## 2 Performance comparisons

This chapter compares the multi-asset investment funds with the Lapis Core Portfolio over a short-term, medium-term and long-term period. Due to the different launch dates of the funds being compared as well as the availability of data, the following time periods for the performance comparisons are set:

- 2 years: 30/03/2012 - 31/03/2014 (comparison with 15 funds)
- 5 years: 01/04/2009 - 31/03/2014 (comparison with 9 funds)
- 14 years: 31/03/2000 - 31/03/2014 (comparison with 3 funds)

The illustrations for the average simple return p.a. as well as the Sharpe ratios are presented as bar tables. Volatility is identified with a black square for the corresponding Sharpe ratio. The results of the Lapis Core Portfolio are indicated in dark blue. The results of the comparative funds which performed better are marked in red and those funds which performed poorly are marked in green. The average of the comparative fund is marked in orange at the end of each table. For reasons of clarity, the Lapis Core Portfolio is designated as LCP and the funds are designated with the Bloomberg codes.

### 2.1 Comparison over two years

Fig. 1 presents the average return p.a. realised by the investment fund as well as by the Lapis Core Portfolio in descending order over the period 30/03/2012 - 31/03/2014.

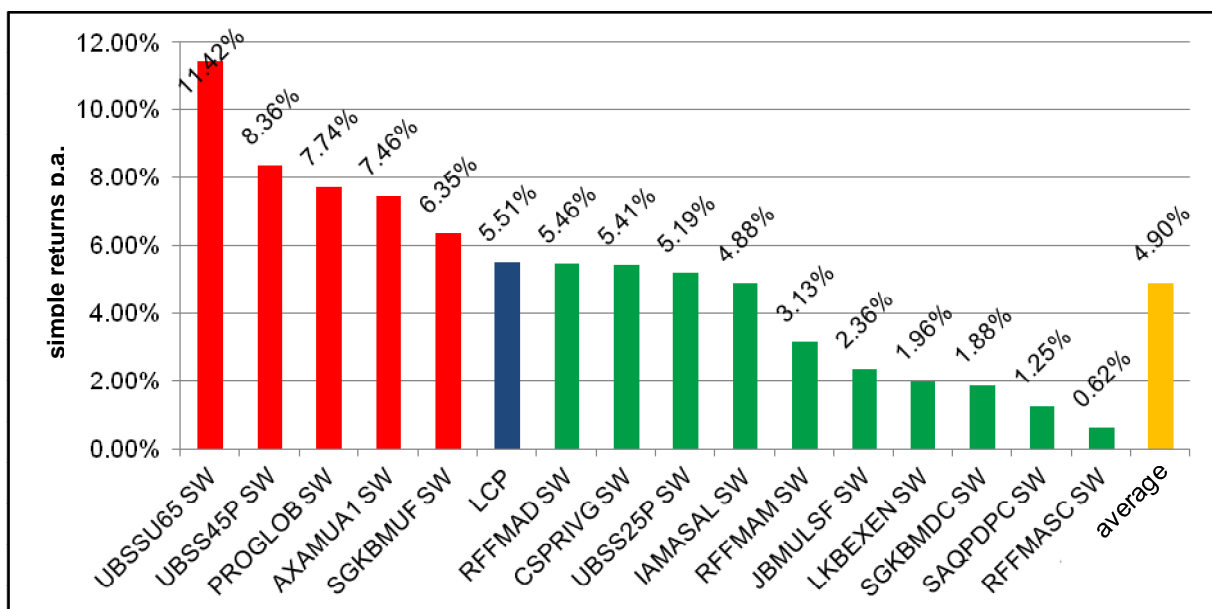


Fig. 1: Average simple return p.a. over two years.

Fig. 1 makes it clear that of the 15 actively managed multi-asset investment funds investigated in the period under consideration over two years, exactly one-third (33.83%) realised a higher average simple return p.a. than Lapis with its passive investment strategy. The average return of all active investment funds at 4.90% is lower than the return for the Lapis Core Portfolio.

The fund realising the highest return p.a. is UBSSU65 SW. The number 65 in the Bloomberg code indicates, on a consolidated basis, the permitted considered and average value of the percentage equity exposure (65.00%). In the asset allocation as of 31/03/2014, the equity exposure is 66.80% for this fund. For the fund taking second place, UBSS45P SW, the permitted value is thus 45.00% and, as of 31/03/2014, an equity exposure of 47.10% is shown in the fund documents. The active investment fund, PROGLOB SW, which realised the third highest return p.a. does not provide for percentage limits in its investment policy. The fund documents only state that investment is primarily in blue chip shares and securities equivalent to shares and bonds. This policy is consistent with the asset allocation as of 31/03/2014, as the equity exposure is 78.55%. In fourth place is AXAMUA1 SW, the objective of which is to realise a sharply diversified index from equity, bonds, property and alternative investments. As of 31/03/2014, the fund has an equity weighting of 38.00%. The active investment fund taking fifth place (SGKBMUF SW) mainly invests in equity and bond investments, according to the statements in the fund documents. When considering the asset allocation as of 31/03/2014, it must be noted that the equity exposure is 47.90%.

Table 1 shows the equity weightings of the funds described above in descending order of the average simple return p.a. as of 31/03/2014.

Comparative fund	Equity weighting
UBSSU65 SW	66.80%
UBSS45P SW	47.10%
PROGLOB SW	78.55%
AXAMUA1 SW	38.00%
SGKBMUF SW	47.90%

**Table 1: Summary of the equity weightings of the comparative funds as of 31/03/2014.**

In Table 1 it can be seen that the active investment funds, which have realised a higher average simple return p.a. than Lapis have an equity weighting of 38.00%-78.55% as of 31/03/2014. These weightings may change due to market movements. For this reason they only apply to the reference date and not the entire period 30/03/2012-31/03/2014. However, the majority cover themselves with the described investment policy of the respective funds.

In contrast, in the Lapis Core Portfolio, Lapis provides for a weighting of 25.00% for the equity. In the comparative period 30/03/2012 - 31/03/2014, the share markets realise double-digit returns in many cases. Among others, the Swiss Market Index (SMI) stood out with 35.59%, the German share index (DAX) with 37.56% and the MSCI ACWI index, used in the Lapis Core Portfolio with 30.85%. As, according to their investment policies, the comparative funds have higher equity weightings, they could also participate correspondingly more in these developments than Lapis and thereby achieve higher returns p.a. However, it is must be noted that the active investment fund with the highest equity weighting (PROGLOB SW) as of 31/03/2014 could not realise the highest average simple return p.a. in this period. As already mentioned, this weighting only relates to the reference date and does not reflect the ratio during the entire period.

With the simple returns, however, no statements can be made regarding the risk (volatility). For this reason, an additional comparison based on the Sharpe ratio (left axis) is shown in Fig. 2 below. As an additional indicator, risk or volatility (right axis) is identified by means of a black square. This is based on the same period and comprises the same active investment funds.

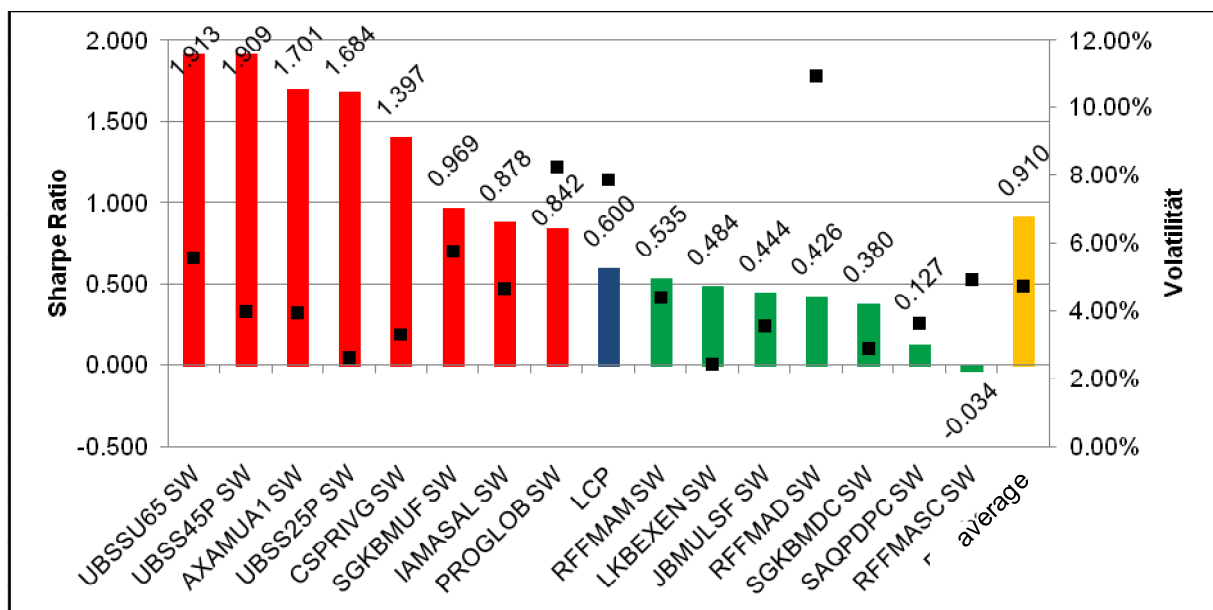


Fig. 2: Sharpe ratio and volatility over two years.

As percentages are considered in relation to percentages, the Sharpe ratio is dimensionless. However, the individual results can be compared with each other as the Sharpe ratio is appropriate for ranking investment alternatives. The following principle applies: the higher the better.



Compared to the results of the average simple return p.a. (see Fig. 1), Fig. 2 shows a different picture. Of the 15 actively investment funds investigated, eight funds (53.33%) realised a higher Sharpe ratio than Lapis. Three additional multi-asset investment funds (UBSS25P SW, CSPRIVG SW and IAMASAL SW) are added to the five active funds, which had already performed better with the average simple return p.a. Despite a minimal, poorer average simple return p.a., these three active funds realised a better Sharpe ratio as they had lower volatility during the period under consideration. While the comparative funds fluctuated on average by 4.72%, the Lapis Core Portfolio had a volatility of 7.87%. In addition, with a Sharpe ratio of 0.910, the average of all active investment funds is higher than the results realised by Lapis (Sharpe ratio of 0.600).

The findings from Fig. 1 and Fig. 2 are noted and summarised in Table 2 below, both in relative as well as in absolute figures.

	Simple return p.a.		Sharpe ratio	
	relative	absolute	relative	absolute
Greater than Lapis Core Portfolio	33.33%	5	53.33%	8
Less than Lapis Core Portfolio	66.67%	10	46.67%	7
Total	100.00%	15	100.00%	15

**Table 2: Performance comparison summary over two years.**

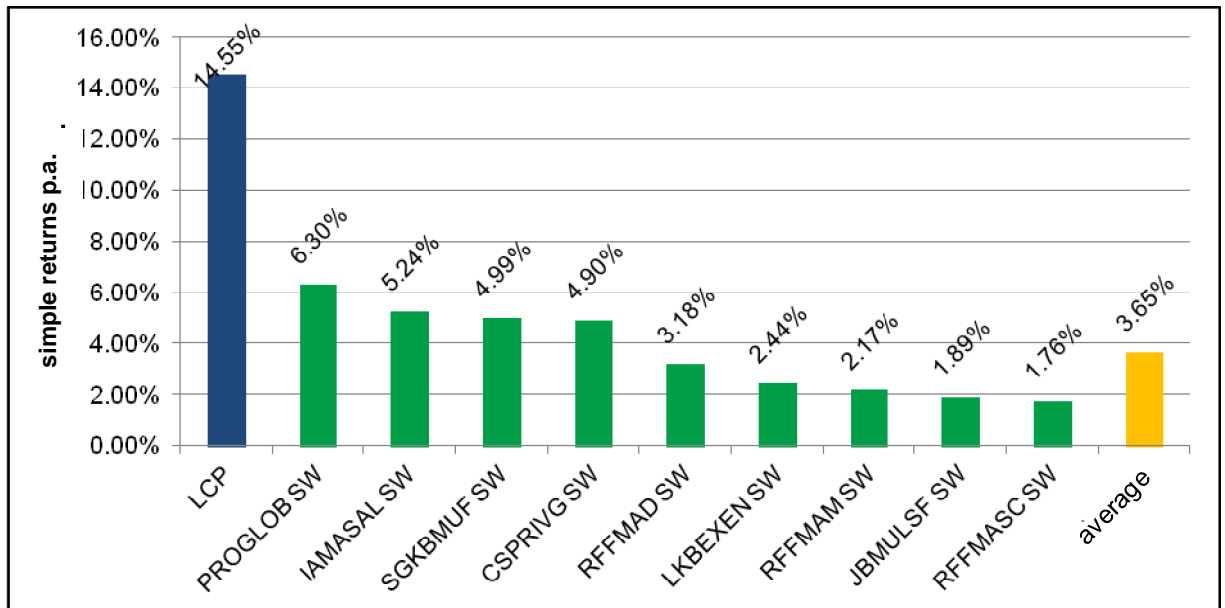
In Table 2 it can be seen that five, and with the Sharpe ratio eight, active investment funds performed better than in the average simple return p.a.

## 2.2 Comparison over five years

As in the previous Chapter 2.1, the average simple returns p.a. over the period of 01/04/2009 - 31/03/2014 are first compared, in order to be able to subsequently carry out a comparison on a risk-adjusted basis.

The 15 funds investigated in Chapter 2.1 do not all have a track record of five years. For this reason, the comparison is reduced to nine comparative funds.

In Fig. 3, the average simple returns p.a. are visualised in descending order over a medium term of five years.



**Fig. 3 : Average simple return p.a. over five years.**

Of the five comparative funds which performed better than Lapis in the average simple return p.a. over two years, only two active investment funds (PROGLOB SW and SGKBMUF SW) have a track record of at least five years. These two investment vehicles and the other seven active multi-asset investment funds realised a lower average simple return p.a. than Lapis with the Lapis Core Portfolio in the period under consideration (see Fig. 3). The average value of 3.65% for the comparative funds is approximately four times lower than the result achieved by Lapis with 14.55%.

A comparison on a risk-adjusted basis is again illustrated with the Sharpe ratio (see Fig. 4).

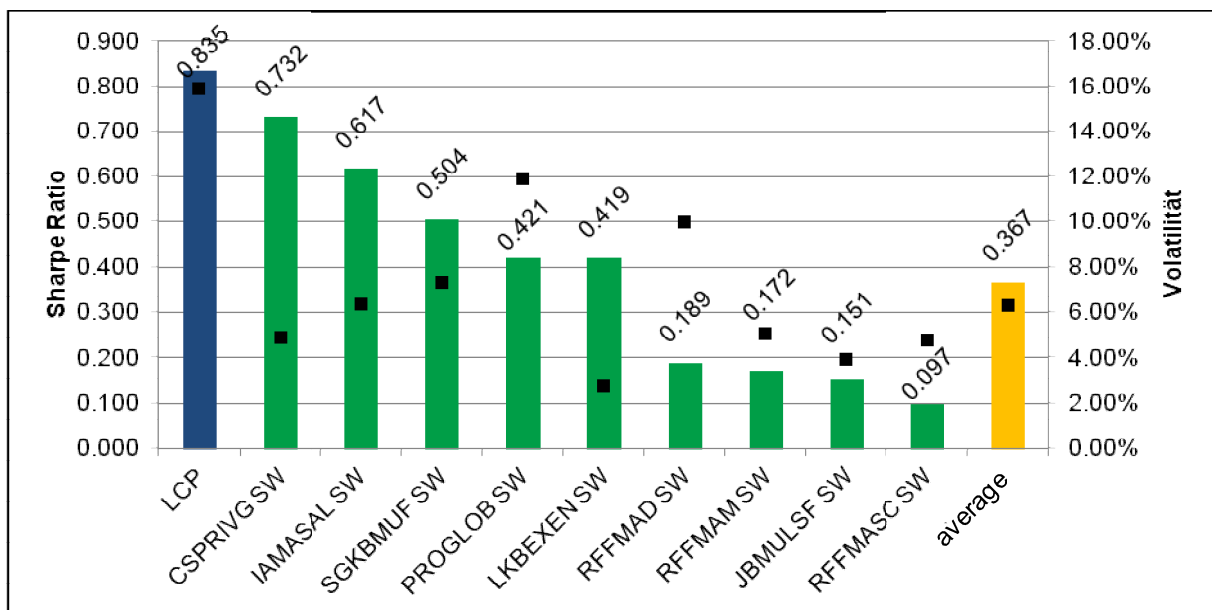


Fig. 4: Sharpe ratio and volatility over five years.

Compared to the results of the average simple returns p.a. (see Fig. 3), only a slightly different picture can be seen in Fig. 4. In fact, only the order of the comparative funds changes. The Lapis Core Portfolio performed the best over the medium term of five years, both in the realised return p.a. as well as the Sharpe ratio. However, it must be mentioned that Lapis, with its passive investment strategy, recorded the highest volatility (black square) with 15.88% in the comparison. This figure is higher than the average figure of the comparative funds, which fluctuated by 6.33%. With a Sharpe ratio of 0.835, Lapis reports a higher figure than the average of active investment funds (Sharpe ratio of 0.367).

The results from the comparison over the medium term of five years (see Fig. 3 and Fig. 4) are summarised in Table 3.

	Simple return p.a.		Sharpe ratio	
	relative	absolute	relative	absolute
Greater than Lapis Core Portfolio	0.00%	0	0.00%	0
Less than Lapis Core Portfolio	100.00%	9	100.00%	9
Total	100.00%	9	100.00%	9

Table 3: Performance comparison summary over five years.

Compared to the results from Chapter 2.1 (see Table 2), none of the actively managed multi-asset investment funds succeeded in outperforming Lapis with its passive investment strategy. No active investment fund was thus able to outperform the Lapis Core Portfolio over two

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and over five years. The period 01/04/2009 - 31/03/2014 not only includes peaks but also crises, which are described below.

The global capital and financial markets dropped markedly in 2009 until March. The sentiment then turned resulting in continuous price gains until the end of the year, This upswing was supported by increasingly positive assessments of the global economic situation. The first effects from the support programs launched by numerous countries began to be felt and the central banks ensured low interest rates with their generous liquidity provision and thus contributed to the economic recovery.

The stock markets in Europe were strongly affected by the ongoing debt crisis of some European countries. In 2010, a number of countries suffered under the high government deficit ratios. These resulted in an increasing scepticism on the capital markets with respect to the debt sustainability. The situation intensified in the first half of the year, which led the European Union (EU) to put a rescue package in place. The markets were not the same worldwide in 2010. Whilst many losses were incurred in Japan and in the Eurozone, the markets in the USA, Great Britain and the emerging markets on balance recorded price gains.

At the beginning of 2011, the world appeared to be positive for investors as, for them, the markets only gained. However, bad news from Fukushima caused panic and there were some significant price drops in the markets. These declines however, were quickly made up again. Already in the second quarter, the markets climbed to new annual highs thus calming investors. However, Greece suddenly faced bankruptcy and new information regarding disastrous government finances came to light in other countries such as Spain, Italy and Portugal. The US budget dispute and the associated rating downgrade exacerbated the situation, resulting in hefty price erosions from the end of July. From then on, the situation was primarily characterised by the European debt crisis. The market participants doubted the ability of politics to solve the problem and any speculation regarding the rescue of nearly bankrupt countries resulted in market fluctuations. In addition, the intervention of the Swiss National Bank (SNB) against the strength of the franc was key for stakeholders in Switzerland. A slight recovery became apparent only towards the end of the year and continued until the end of the year.

At the beginning of 2012, the development of the financial markets was dominated by the decision of the European Central Bank (ECB) to purchase an unlimited number of government bonds from indebted countries. This action drove many indices up; however, signs of a slowdown could be seen at the end of February with the announcement of an economic downturn. Finally, a debt haircut was taken by Greece and, as a result, the global markets were in the red from the end of March until the beginning of June. In June, European politicians agreed on a continuing rescue package as well as a fiscal pact. In order to save the

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euro, the ECB Board agreed to an unlimited purchase of the bonds of EU debtor countries. In order to revive the ailing US real estate market, the US central bank kept interest at a low level and announced the launch of a purchase programme of mortgage-backed securities. These measures in a calming of the markets allowing stock market year 2012 to ultimately end on a positive note.

2013 proved to be an excellent stock exchange year as many indices climbed to new highs during the course of the year. However, many market players regarded this development as more of a liquidity-induced phenomenon, which largely developed separately to fundamental economic data and corporate results. In the first quarter of 2014, the geopolitical risks concerning Crimea (Ukraine) ensured uncertainty on the financial markets. However, this did not put the economic recovery at risk. Due to the solid corporate and economic data, the markets tended to remain unimpressed by the political power plays.

In summary, it should be noted that the period 01/04/2009-31/03/2014 was a very turbulent one. However, with its strategy, Lapis succeeded in coping with this period the best and therefore outperformed the active multi-asset investment funds with respect to the average simple return p.a. and the Sharpe ratio. The results appear to suggest that the strategy pursued by Lapis has proven itself.

### **2.3 Comparison over 14 years**

Of the nine funds investigated from Chapter 2.2, only three active multi-asset investment funds have a track record of 14 years. For this reason, the meaningfulness of this comparison over the long term is more limited compared to the short-term and medium-term periods.

In Fig. 5 the average simple returns p.a. are again presented in descending order over a time window of 31/03/2000 - 31/03/2014.

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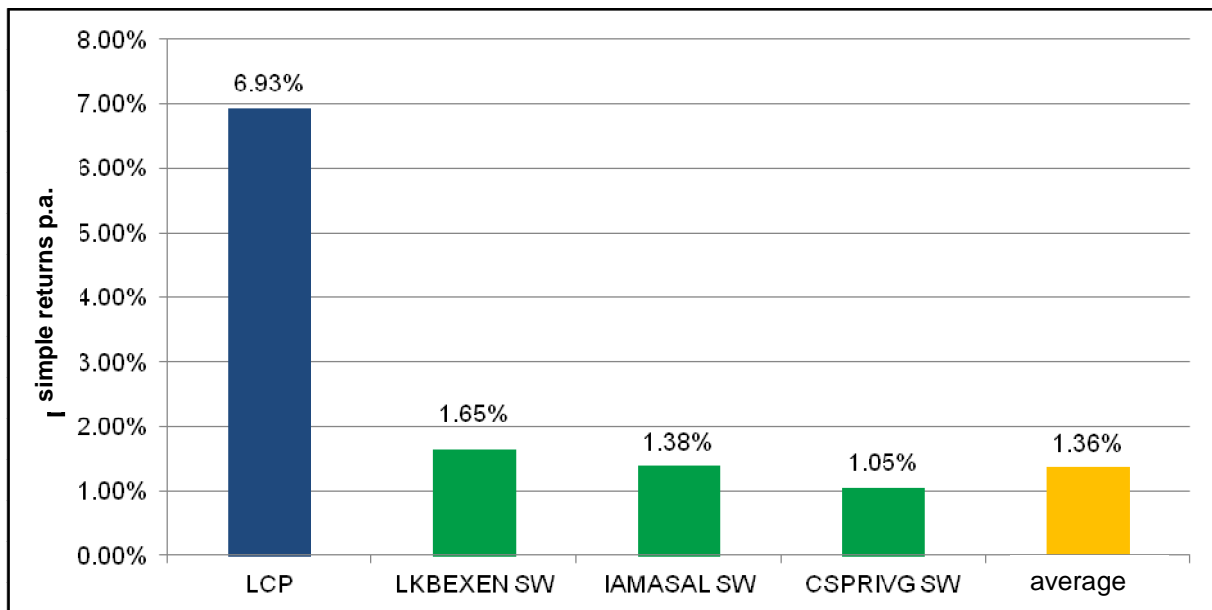


Fig. 5: Average simple return p.a. over 14 years.

In Fig. 5 it can be seen that Lapis realised the highest average simple return p.a. as in the comparison over five years (see Chapter 2.2). The average of 1.36% for the active funds is some five times less than the result realised by Lapis, which generated a return p.a. of 6.93%.

Fig. 6 illustrates the comparison based on the Sharpe ratio.

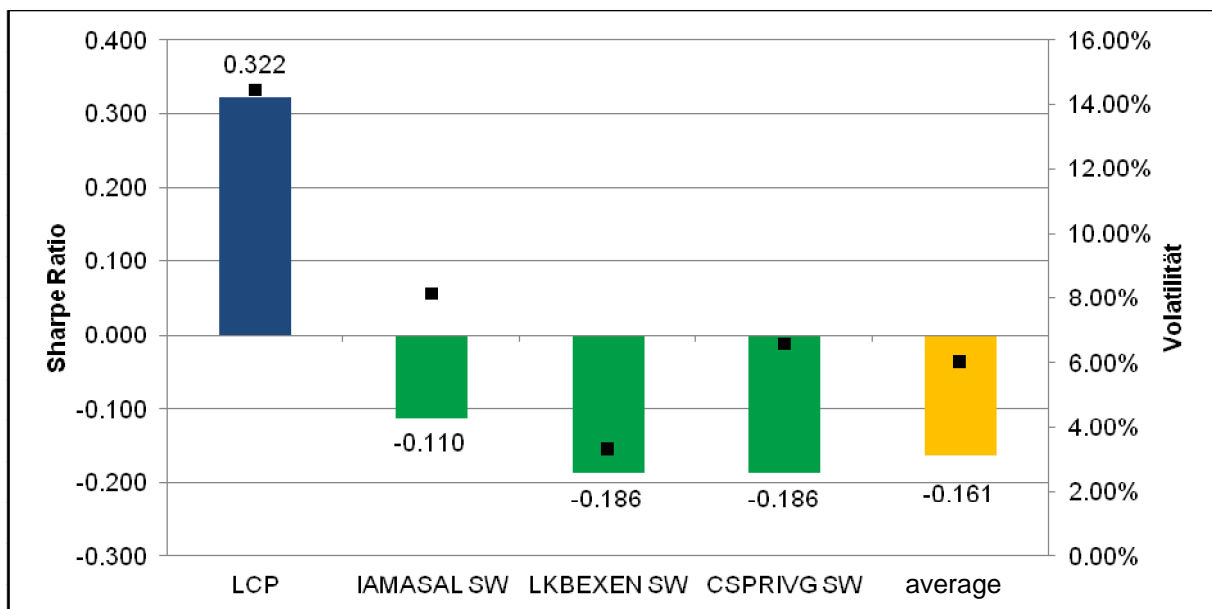


Fig. 6: Sharpe ratio and volatility over 14 years.

The passive investment strategy of Lapis realised the best result over the long term, not only in the return p.a. achieved (see Fig. 5), but also in terms of the Sharpe ratio (see Fig. 6). As in the comparison over the medium term (see Chapter 2.2), the Lapis Core Portfolio recorded the highest volatility (black square) with 14.45%. In contrast, the comparative funds fluctu-

ated by 6.02% on average. In contrast to the short-term and medium-term period, the three actively managed investment funds (IAMASAL SW, LKBEXEN SW and CSPRIVG SW) realised negative results in the Sharpe ratio for the first time in the comparison over 14 years. It should be mentioned that only Lapis reported a positive Sharpe ratio over the long term.

The results from the long-term comparison (see Fig. 5 and Fig. 6) are illustrated in Table 4 in relative and absolute figures.

	Simple return p.a.		Sharpe ratio	
	relative	absolute	relative	absolute
Greater than Lapis Core Portfolio	0.00%	0	0.00%	0
Less than Lapis Core Portfolio	100.00%	3	100.00%	3
Total	100.00%	3	100.00%	3

**Table 4: Performance comparison summary over 14 years.**

The period 31/03/2000- 31/03/2014 not only comprises the market developments, which were already described in Chapter 2.2 but also the highs of the markets between 2003 - 2006, the dot-com bubble from 1999 - 2003 as well as the global financial crisis from 2007 - 2009, which started in 2007 in the US as the real estate crisis.

As the performance comparison over the long term is more limited with three comparative funds, no further statements regarding the market development (as in Chapter 2.2) will be made here. However, it can be said in summary that despite these market movements, Lapis performed best in the medium term (see Chapter 2.2) and in the long term with respect to the average simple return p.a. and the Sharpe ratio.

### 3 Conclusion

Taking into account all the results from Chapter 2, the Lapis Core Portfolio was subjected to a total of 27 comparisons over a short-term, medium-term and long-term period. Due to the differing launch dates of the active investment funds, the number of comparisons per time window differs. The results in Table 5 relate to the average simple return p.a.

Simple return p.a.					
Term	Lapis Core Portfolio better than fund		Fund better than Lapis Core Portfolio		Total
	relative	absolute	relative	absolute	absolute
Short-term	66.67%	10	33.33%	5	15
Medium-term	100.00%	9	0.00%	0	9
Long-term	100.00%	3	0.00%	0	3
Total	81.48%	22	18.52%	5	27

**Table 5: Summary of average simple return p.a.**

Across all three periods, it can be seen (see Table 5) that the Lapis Core Portfolio was only outperformed by active investment funds over the short-term period (33.33%). In accordance with the statements made in Chapter 2.1, this is due to the higher equity weightings of these active funds, however, as the share markets realised double-digit returns in many cases during the short-term period and the actively managed investment funds were able to participate more in these developments than Lapis.

Table 6 gives a summary of the comparison based on the Sharpe ratio.

Sharpe ratio					
Term	Lapis Core Portfolio better than fund		Fund better than Lapis Core Portfolio		Total
	relative	absolute	relative	absolute	absolute
Short-term	46.67%	7	53.33%	8	15
Medium-term	100.00%	9	0.00%	0	9
Long-term	100.00%	3	0.00%	0	3
Total	70.37%	19	29.63%	8	27

**Table 6: Summary of the Sharpe ratio.**

Compared to the results of the average simple return p.a. (see Fig. 5), Fig. 6 shows a slightly different picture. In the short-term period, three additional multi-asset investment funds were added to the five active funds, which had already achieved a higher return p.a. Despite a



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minimal poorer return p.a., these three actively managed investment funds performed better in the Sharpe ratio as they had a lower volatility than Lapis in the period under consideration (see Chapter 2.1).

When considering the results of all three periods, it must be noted that the Lapis Core Portfolio was only outperformed by the active investment funds over the short-term period. According to the information disclosed, this is due to the higher equity weightings (see Chapter 2.1) None of the actively managed multi-asset investment funds therefore succeeded in outperforming the passive investment strategy of the Lapis Core Portfolio with respect to the average simple return p.a. and the Sharpe ratio over two, five and 14 years.

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