FHS St.Gallen
Hochschule
für Angewandte Wissenschaften

LAPIS ASSET MANAGEMENT Ltd

PERFORMANCE COMPARISON OF THE LAPIS CORE PORTFOLIO BVV2 VERSUS THE PICTET BVG INDICES (SUMMARY)

Bachelor Thesis

for Lapis Asset Management Ltd.

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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 strategy.

For this reason, this thesis compares the passive investment strategy of the Lapis Core Portfolio BVV2 with the Pictet BVG Indices as they are accepted benchmarks for Swiss pension funds.

2 Performance comparisons

This chapter compares the Pictet VBG Indices with the Lapis Core Portfolio BVV2 over a short-term, medium-term and long-term period. The following periods were established for the performance comparisons:

- 4 years: 31/03/2010–31/03/2014 (comparison with seven BVG indices)
- 9 years: 31/03/2005–31/03/2014 (comparison with seven BVG indices)
- 15.75 years: 30/06/1998–31/03/2014 (comparison with seven BVG indices)

The illustrations for the average simple returns p.a. as well as the Sharpe ratios are presented as bar diagrams. The volatility is identified with a black square for the corresponding Sharpe ratio. The results of the Lapis Core Portfolio BVV2 are marked in dark blue. The results of the Pictet BVG Indices which performed better are marked in red and those indices which performed poorly are marked in green. The average of the comparative indices is shown at the end of each illustration in orange. For reasons of clarity, the Lapis Core Portfolio BVV2 is designated as LCP BVV2 and, for the BVG Indices, the addition "Pictet" is deleted.

2.1 Comparison over four years

In Fig. 1 the average simple returns p.a. are presented in descending order over the period 31/03/2010 - 31/03/2014.

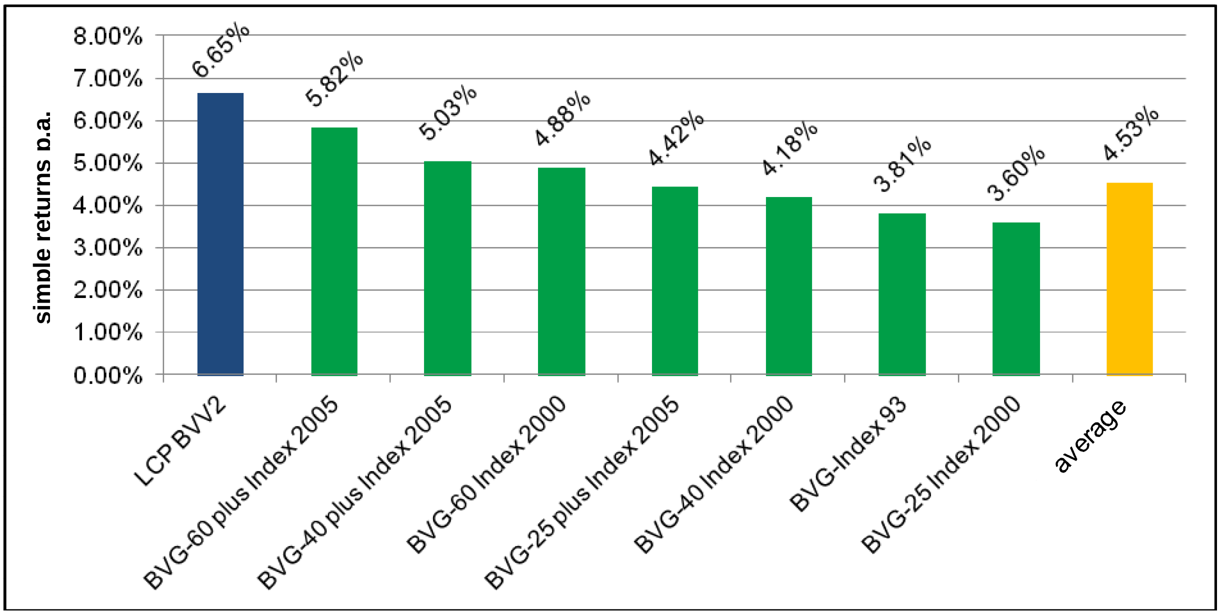

Fig. 1: Average simple return p.a. over four years.

In Fig. 1 it can be seen that with its Lapis Core Portfolio BVV2 Lapis realised the highest average simple return p.a., with a value of 6.65% compared to the Pictet BVG Indices. In addition, the average value of the comparative index of 4.53% is 1.5 times less than the return on Lapis.

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

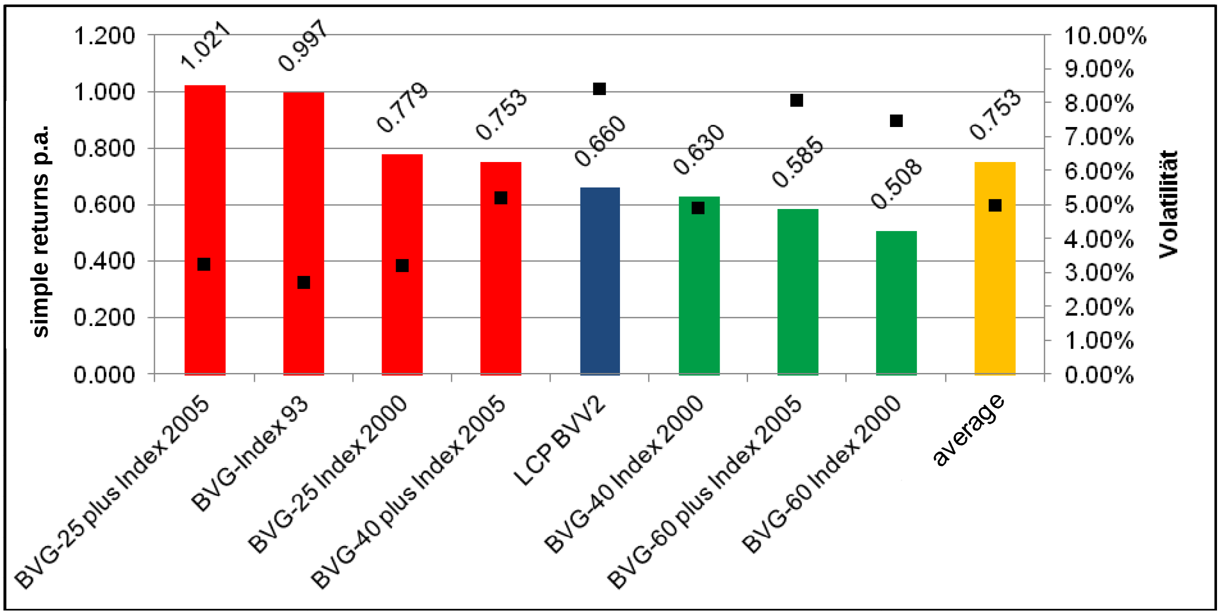

Fig. 2: Sharpe ratio and volatility over four years.

The following principle applies with the Sharpe ratio: 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 seven BVG Indices investigated, four (57.14%) realised a higher Sharpe ratio than Lapis. Despite a poorer return p.a., these four indices realised a better Sharpe ratio as they had lower volatility during the period under consideration. While the comparative indices fluctuated on average by 4.97%, the Lapis Core Portfolio BVV2 realised a value of 8.40%, which also corresponds to the highest volatility in the period under consideration. With a Sharpe ratio of 0.753, the average of all BVG Indices is higher than the results realised by Lapis, which realised a Sharpe ratio of 0.660.

The findings from Fig. 1 and Fig. 2 are noted and summarised in Table 1 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 BVV2	0.00%	0	57.14%	4
Less than Lapis Core Portfolio BVV2	100.00%	7	42.86%	3
Total	100.00%	7	100.00%	7

Table 1: Performance comparison summary over four years.

In Table 1 it can be seen that zero, and with the Sharpe ratio four, BVG Indices performed better than in the average simple return p.a.

2.2 Comparison over nine years

As in the previous Chapter 2.1, the average simple returns p.a. over the period of 31/03/2005 - 31/03/2014 are first compared in order to be able to subsequently carry out a comparison on a risk-adjusted basis.

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

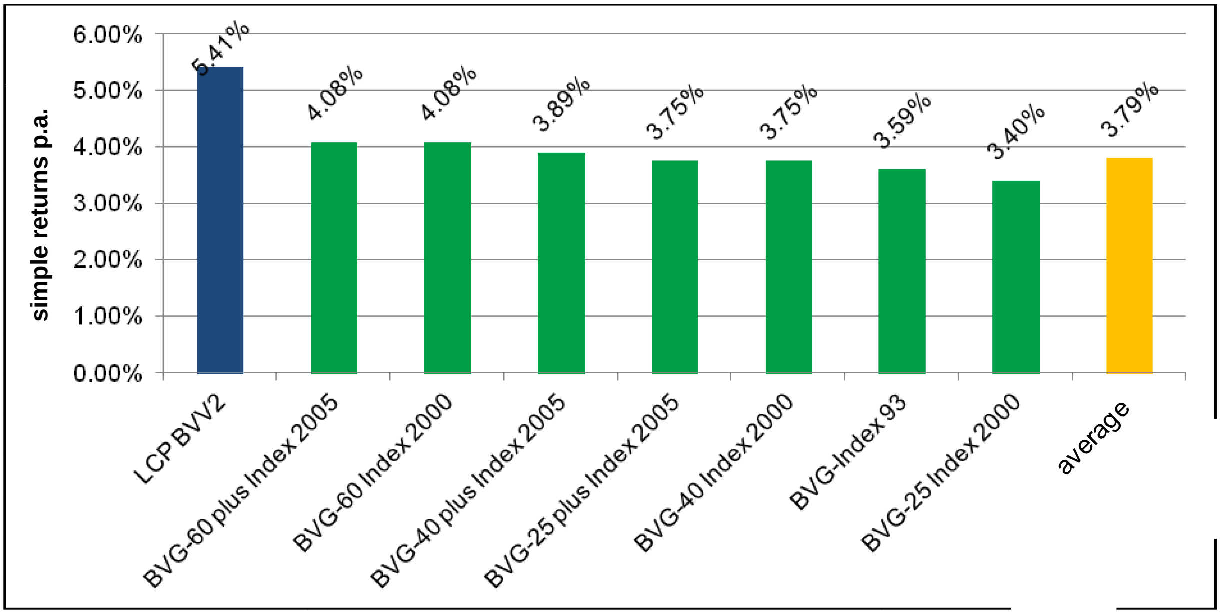

Fig. 3: Average simple return p.a. over nine years.

The Lapis Core Portfolio BVV2 realised the highest average simple return p.a. as in the comparison over four years (see Chapter 2.1). With a return p.a. of 5.41%, Lapis realised an approximately 1.4 times higher result than the average of the BVG Indices (3.79%). In addition, it must be mentioned that all the results of the comparative indices as well as the Lapis

Core Portfolio BVV2 performed more poorly on the whole than in the comparison over four years. The reason for this situation is, among others, the global financial crisis of 2007 - 2009, which falls in this period under consideration.

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

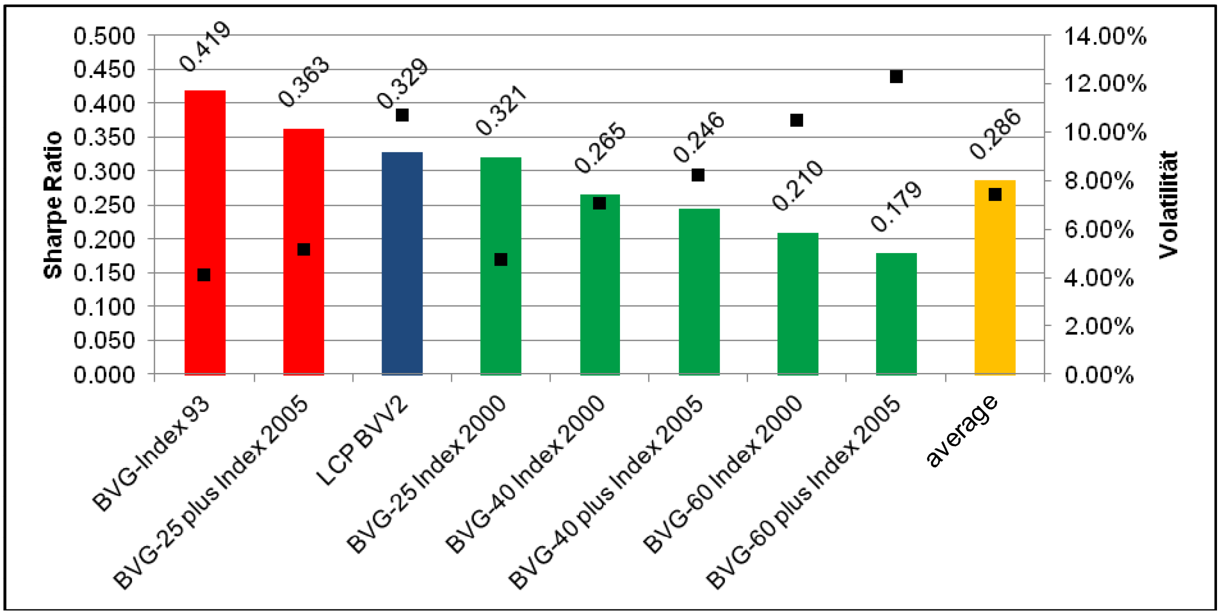

Fig. 4: Sharpe ratio and volatility over nine years.

In contrast to the results of the average simple return p.a. (see Fig. 3), Fig. 4 shows a different picture. Of the seven BVG Indices investigated, two (28.57%) realised a higher Sharpe ratio despite a lower return p.a. than Lapis. The reason for this is that these two indices have a lower volatility than the Lapis Core Portfolio BVV2 in the comparative period. In addition, it must be mentioned that the BVG Index 93 and the BVG-25plus Index 2005 already reached a higher Sharpe ratio over the short-term period. Compared to the short-term period, the BVG-25 Index 2000 and the BVG-40 plus Index 2005 performed more poorly than Lapis over the medium term. Over this period, the Lapis Core Portfolio BVV2 had a volatility of 10.74%, while the comparative indices fluctuated on average by 7.45%. With a Sharpe ratio of 0.329, Lapis realised a higher value than the average of all comparative indices (Sharpe ratio of 0.286).

The results from the comparison over the medium term of nine years (see Fig. 3 and Fig. 4) are summarised in Table 2.

	Simple return p.a.		Sharpe ratio	
	relative	absolute	relative	absolute
Greater than Lapis Core Portfolio BVV2	0.00%	0	28.57%	2
Less than Lapis Core Portfolio BVV2	100.00%	7	71.43%	5
Total	100.00%	7	100.00%	7

Table 2: Performance comparison summary over nine years.

In summary, it can be said that Lapis realised the highest average simple return p.a. over the short term as well as over the medium term. While four BVG Indices performed better over four years with respect to the Sharpe ratio (57.14%), only two indices realised a higher value over nine years (28.57%).

2.3 Comparison over 15.75 years

In Fig. 5, the average simple returns p.a. are visualised in descending order over the period 30/06/1998-31/03/2014.

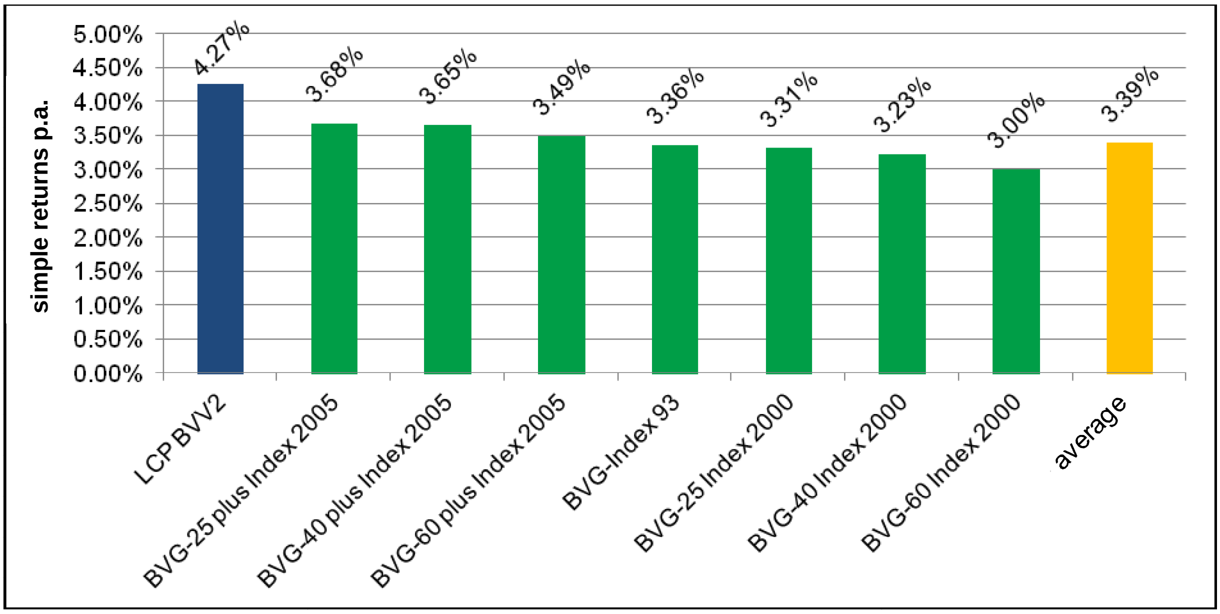

Fig. 5: Average simple return p.a. over 15.75 years.

It can be seen from Fig. 5 that Lapis again realised the highest average simple return p.a., as in the comparison over four years (see Chapter 2.1) and over nine years (see Chapter 2.2). With 3.39%, the average of the BVG Indices is some 1.3 times less than the result realised by Lapis, which gained a return p.a. of 4.27% with its Lapis Core Portfolio BVV2. In addition, it must be noted that the results of the BVG Indices and the Lapis Core Portfolio BVV2 are, on the whole, lower than for the comparisons over the short term and the medium-term. Despite peaks in the markets, there were also crises in this period under consideration, such as the dot-com bubble of 1999 - 2003 as well as the global financial crisis of 2007 - 2009, which started in 2007 as a real estate crisis in the US. These market developments, among others, are the reasons for this situation.

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

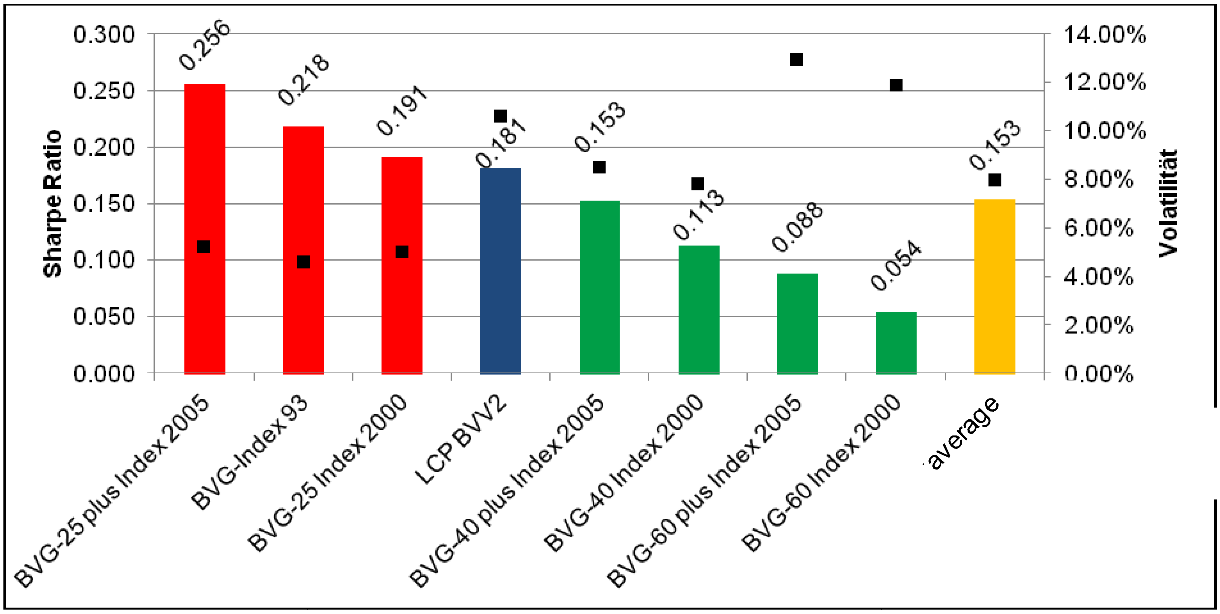

Fig. 6: Sharpe ratio and volatility over 15.75 years.

Compared to the results of the returns p.a. realised (see Fig. 5), Fig. 6 again paints a different picture. Of the total of seven BVG Indices investigated, three (42.86%) realised a higher Sharpe ratio than Lapis despite a lower average simple return p.a. The reason for this is again that these three indices had lower volatility in contrast to the Lapis Core Portfolio BVV2. Furthermore, it must be noted that the BVG-25 plus Index 2005 and the BVG-Index 93 succeeded in realising a higher Sharpe ratio then Lapis over the short-term, medium-term and long-term periods. The BVG-25 Index 2000 performed better than the Lapis Core Portfolio BVV2 both over the short-term as well as the long-term period. While the comparative indices on average fluctuated by 8.00%, Lapis recorded a higher value of 10.59%. With a Sharpe ratio of 0.181, Lapis performed better than the average of the BVG Indices (Sharpe ratio of 0.153).

The results from the long-term comparison (see Fig. 5 and Fig. 6) are illustrated in Table 3 in relative and absolute figures.

	Simple return p.a.		**Sharpe ratio**	
	relative	absolute	relative	absolute
Greater than Lapis Core Portfolio BVV2	0.00%	0	42.86%	3
Less than Lapis Core Portfolio BVV2	100.00%	7	57.14%	4
Total	100.00%	7	100.00%	7

Table 3: Performance comparison summary over 15.75 years.

In Table 3 it can be seen that zero, and with the Sharpe ratio three, BVG Indices performed better than in the average simple return p.a.

3 Conclusion

The Lapis Core Portfolio BVV2 was compared a total of 21 times with the Pictet BVG Indices (see Chapter 2) over a short-term, medium-term and long-term period. The results in Table 4 relate to the average simple return p.a.

Simple return p.a.					
Term	Lapis Core Portfolio BVV2 better than fund		Index better than Lapis Core Portfolio BVV2		Total
	relative	absolute	relative	absolute	absolute
Short-term	100.00%	7	0.00%	0	7
Medium-term	100.00%	7	0.00%	0	7
Long-term	100.00%	7	0.00%	0	7
Total	100.00%	21	0.00%	0	21

Table 4: Summary of average simple returns p.a.

A clear picture emerges when considering Table 4. Over all three periods, the Lapis Core Portfolio BVV2 realise the highest average simple return p.a. respectively and therefore performed better than the Pictet BVG Indices.

Table 5 shows the comparisons on a risk-adjusted basis.

Sharpe ratio					
Term	Lapis Core Portfolio BVV2 better than index		Index better than Lapis Core Portfolio BVV2		Total
	relative	absolute	relative	absolute	absolute
Short-term	42.86%	3	57.14%	4	7
Medium-term	71.43%	5	28.57%	2	7
Long-term	57.14%	4	42.86%	3	7
Total	57.14%	12	42.86%	9	21

Table 5: Summary of the Sharpe ratio.

Compared to the results of the average simple returns p.a. (see Table 4), a different picture emerges in Table 5. Over the short-term period, four BVG Indices (57.14%), over the medium-term period two comparative indices (28.57%) and over the long-term period three Pictet BVG Indices (42.86%) performed better than the Lapis Core Portfolio BVV2. The reason for the poorer performance by Lapis is due to the higher volatility of its portfolio.

Taking into account the weightings and the structure of the respective indices, only the BVG-60 plus Index 2005 can be compared directly with Lapis. In conclusion, the Lapis Core Portfolio BVV2 thus performed better than its greatest competitor across all comparisons in terms of the average simple return p.a. and the Sharpe ratio.