

## OPEN-END INVESTMENT FUNDS IN CROATIA

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### *Abstract*

*This work discusses investment funds in Croatia, with a particular emphasis on open-end investment funds. After a short review of the development of the funds, the perception of the funds is analysed, as are the trends in total assets and in average yields. The degree of concentration of open-end investment funds is shown with statistical measures of concentration (the Gini Coefficient, the Lorenz Curve and concentration ratios). All these indicators show that the concentration is moderate to strong. The greatest yields are given by the equity funds, but these are also the most risky.*

*Key words: investment funds, open-end investment funds, bond fund, equity fund, mixed fund, money fund, Gini coefficient, Lorenz curve, Croatia*

### **1 Introduction**

This paper gives an analysis of investment funds, particularly open-end investment funds in Croatia, interesting to a broad range of investors simply because they can invest in them when and as much as they like. Investment funds are a relatively new phenomenon on the Croatian financial market, because right up to ten years ago there was no legislative environment for such institutions. The first investment fund management com-

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pany acquired an operating licence in 1997, and not until two years later did the fund industry start to develop.

How does this new and insufficiently familiar manner of investment function on the Croatian financial market? How do members of the public perceive these funds, and to what extent are they acquainted with the concept of investment banking? What are the trends in the total assets of the funds and what are their average yields?

In order to find answers for these questions, we shall below, from part two to part four, give a review of the situation on the investment funds market, test out the legal regulations that provide the framework for their operations, and analyse the most important characteristics of the investment funds. In part five we shall discuss the extent to which the general public is acquainted with investment funds, and in part six classify the funds according to kinds of investment into equity, mixed, bond and money funds, while in the seventh chapter we shall give a picture of the trends in the funds' assets from the time they were founded until 2004. For the sake of a better understanding of the current situation on the investment fund market, in part eight we shall analyse statistical indicators of the funds themselves, and in part nine we calculate market concentration. Chapter ten provides a comparative analysis of the average yields of mixed, equity, bond and money funds, and an analysis of investment decisions. We conclude that the assets of the funds are rising with considerable rapidity in spite of the general public's being insufficiently acquainted with the investment funds. Although there are quite many funds the concentration of assets in a few funds is quite heavy. Analysing yields, we conclude that the greatest yields are given by the equity funds, which are also the funds attended by the greatest degree of risk.

## **2 The development of investment funds in Croatia**

Investment funds figure on the financial market as institutional investors who via public invitations assemble financial resources and, respecting the principles of security, profitability, liquidity and distribution of risks, invest in transferable securities and/or real estate, as well as deposits in financial institutions. The investment funds are managed by investment fund management companies, in line with the statutes of the funds and the provisions of the Investment Funds Law. The value of the assets of a given fund is calculated and stated by the management company.

The first investment fund management company received an operating licence in 1997, and two years after that the real development of the fund industry began, when seven privatised investment funds (PIFs) were founded. At the present time Croatia has 17 firms registered to manage investment funds. Also registered are 41 open-end investment funds and five closed-end investment funds.<sup>1</sup> At the end of 2003, the total net asset worth of the open-end funds was 2.9 billion kuna, and the net assets of the closed-end investment funds were valued at something less than one billion (Securities Commission, 2004).

The net asset worth of the 37 active open-end investment funds as of December 31 came to 4.5 billion kuna, or an increase of 53% over the previous year. The structure of

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<sup>1</sup> The following are the closed-end investment funds: Breza Invest d.d., Kapitalni fond d.d., Velebit d.d., and Terra Firma d.d.

the open-end investment funds, according to kind of investment, was as follows: there were 12 mixed, 11 money, 9 bond and 9 equity funds. The total net assets of the closed investment funds came to 1.2 billion kuna, and in the same period had increased by 21%. The total net asset worth of all open-end investment funds as of February 28, 2005 was 5.5 billion kuna. Of the 37 active investment funds, 27 of them were owned by six banks (Komisija za vrijednosne papire, 2004).

All the investment fund management companies licensed by the Securities Commission are members of the Investment Funds Management Companies Association, which is part of the Croatian Chamber of Economy.

### **3 The legislative framework**

The Investment Funds Law lays down the conditions for the establishment of funds and investment fund management companies and governs the manner of the operation of these firms (NN 107/95, 12/96, 114/01).

An investment fund can only be set up on the basis of an authorisation (licence) from the Securities, its purpose being to collect money and assets, via the public sale or issue of paper concerning shares in the fund, which resources, with constant respect being paid to the principles of security, profitability, liquidity and spread of risk, are invested in securities and/or real estate as well as in deposits in financial institutions. An investment fund is established and managed by an investment fund management company in line with the statutes of the fund and the provisions of the Law. A company is founded in the shape of a joint stock or limited liability company, with an initial equity of at least one million kuna. If the company does not set up a fund within a year of having received its authorisation from the Commission, the operating license automatically expires. A company must supply the Commission with a prospectus of the fund that it manages, and any change to this prospectus. A prospectus is a public offer and an invitation to purchase share papers in an open-end fund, and for subscription to shares in a closed-end fund, and has to contain information and data pursuant to which investors can get an idea about the real nature of the fund. An investment fund may be set up in the form of a closed-end or an open-end fund.

An open-end investment fund is a special kind of asset, without legal personality, which, on condition of authorisation from the Commission, is founded by an investment fund management company. Its business is the collection of monetary resources by issuing and public sale of certificates of shares in the fund the proceeds of which are then invested in accordance with the regulation principles. There is no restriction as to the number of shares, and the fund can increase according to increments in the number of shares sold. The value of the fund is calculated and determined by the company every trading day pursuant to the current values of its securities and deposits in financial institutions and other asset values in conjunction with deductions for liabilities. Every owner of a share certificate can demand redemption of the share certificate, and cancellation of membership of the fund.

A closed-end investment fund is a joint stock company that, in conjunction with the authorization of the Commission, is founded and managed by an investment fund man-

agement company, and its business is the collection of monetary resources and assets through the public offer of its shares, which are transferable without any restriction, and the investment of these funds. When the anticipated shares are once sold, the sales are stopped and the number of shares sold no longer changes. The lowest amount of initial equity of a closed-end investment fund is five million kuna. The company calculates the value of the fund's assets once monthly pursuant to the exchange values of its papers and deposits in financial institutions and other asset values, concomitant with the deduction of liabilities.

#### **4 The characteristics of open-end investment funds**

Investment in investment funds has a long tradition in the world. Medium and long term investments in funds have a number of advantages over other forms of saving such as savings in banks, life insurance and the purchase of real estate. Shares in the funds are very liquid, which is very largely the result of professional management and the great dispersal of the investment. In this manner, confidence and trust in the fund are achieved. The number of investors in investment funds is increasing every day, which tells us that most people are satisfied with the results achieved, and with the characteristics of them:

- *Liquidity* – It is possible to cash in or redeem purchased shares whenever the investor wishes, because the investment funds are able to transform non-cash resources, such as securities, into a cash form at very short notice. It is possible to withdraw funds from an investment fund without any exit or back-end commission, and the management company must pay the money into the investor's bank within seven days of receiving the demand for redemption.
- *Security and yield* – The first element of security is the investment of the resources into a great number of financial instruments, or securities (diversification). The resources are invested only in the safest financial instruments (Brigham, 2004). Long-term mean annual yields of the world's investment funds range between 6 and 15%, which in terms of yield puts them level with equity and real estate. Because of the long term stability of yields, liquidity and low operating costs, investment funds are one of the best ways of saving long term.
- *Costs of investment* - When investing in investment funds it is possible to calculate the entry and exit commissions, the management charges and the certificate issue charges. The amount of entry commission on the whole does not exceed 3% of the value of the investment augmented by tax, and back end load is mostly not charged. The management company's fee can come yearly to at most 2% of the total assets of the fund, and the costs of issuing documents and redemption can come at most up to 5% of the value of the share certificate. Principles of calculating costs vary among the funds, and according to the nature of the share.
- *Tax* – An open-end investment fund is not considered a legal entity in Croatia and hence does not pay corporate income tax. For this reason investment funds can produce greater yields than other capital market participants.

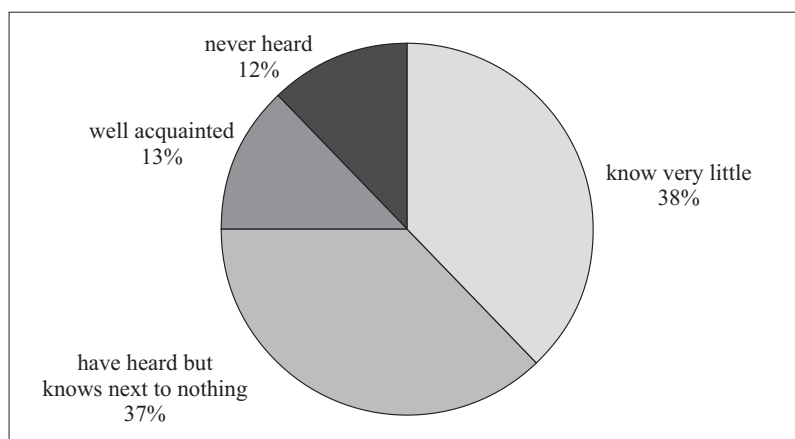
- *Privacy of information about ownership of shares* – This is guaranteed, and the protection against the possibility of other people using these assets unlawfully is very strong. All data recorded on electronic media are kept in perpetuity. The management company keeps records about the owners of shares and considers them highly confidential.
- *Information* – At any moment at all, an investor can find out the worth of his investment.

## 5 How the investment funds in Croatia are perceived

According to the Market Research Centre (GfK, 2004), in a survey carried out over the whole of Croatia on a sample of respondents with personal incomes higher than the average for the country, investment in investment funds is still a relatively new and unknown manner of laying out monetary resources. For the moment only a small number of clients are investing, but they are investing large monetary resources. From the results it can be seen that the public is superficially acquainted with the concept of investment banking, i.e., investment funds. Of all the kinds of fund, members of the public were most acquainted with money funds, in which they would also be the most likely to invest.

More than 40% of the respondents knew at least one investment fund (had heard the name of the fund, after being presented with a list of the names of all the open-end funds on the Croatian market). More than a third of respondents know only the owner of the fund (the name of the company or bank). The best known founders of funds, which also have the most prominent advertising, are PBZ Invest and ZB Invest. The most competitive product – time deposits in banks – is still perceived as a better investment than investment in the funds. Hence the investment fund is still perceived as being less certain, reliable and honest, and is also considered a manner of saving reserved for the rich.

*Graph 1 Understanding of the concept of investment banking – December 2003*



Source: GfK (2004)

## 6 Division of open-end investment funds according to type of investment

*Bond funds* have mainly or exclusively debt instruments in their portfolio. They are meant for more conservative investors who are less inclined to take risks and experience changes in values. These funds are less risky, provide greater investor security but do not have the ability suddenly to realise large profits. They are appropriate for investments over a relatively short period of time, i.e., from three to five years.

*Mixed funds* contain equity and bonds. They are more risky than bond funds, but are able to make bigger profits. They are recommended for more long-term investment, for example, from five to ten years.

*Equity funds* have the whole of their portfolio in equity. This is the most risk-attended kind of fund, but it can also produce the highest profits. Such funds are most appropriate for long-term investment, of ten years and over.

*Money funds* on the whole have a constant moderate growth. They operate by collecting monetary resources by public offers of their shares and investing the resources they have assembled in certain and profitable financial market instruments.

Table 1 *Open-end investment funds in 2003*

Equity funds	Mixed funds	Bond funds	Money funds
ICF Equity	Erste International	Erste Bond	Erste Money
HI-Growth	HI-Balanced	ICF Fixed Income	ICF Money Market
OZ Global Equity	HI-Conservative	Orbis	HI-Cash
Raiffeisen Active	OZ Balanced	OZ Global Bond	OZ Cash
Select Europe	PBZ Global fond	PBZ International Bond	PBZ Euro Novčani fond
Victoria	Raiffeisen Balanced	Raiffeisen Bonds	PBZ Kunski Novčani fond
	ZB global	Select Eurobond	PBZ Novčani fond
	ZB trend	ZB bond	Raiffeisen Cash
			Select Novčani
			ZB europlus
			ZB plus

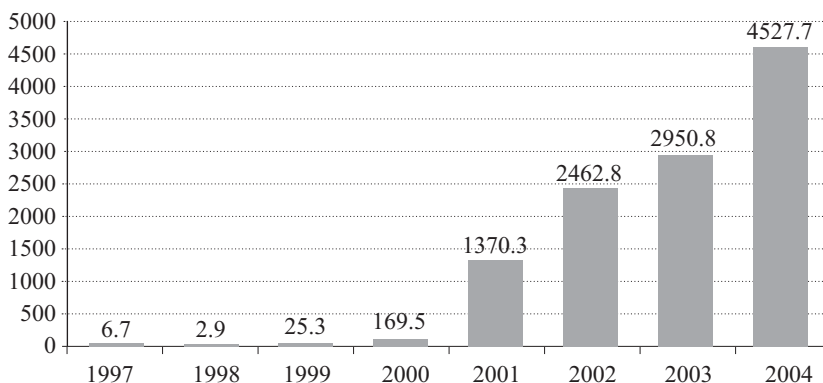
Source: *Komisija za vrijednosne papire (2004)*

## 7 Trends in total assets of the open-end investment funds

Open-end investment funds are the best indicator of the development of the fund industry. However, they have not managed to repeat the boom of 2002; although there was a rise of 88% in 2002, leading analysts to predict a continuation of this strong growth in 2003, this did not in fact occur. The assets of the open-end funds in 2003 came to almost 3 billion kuna, which was a rise of 20% over the 2002 sum. One of the causes of the slower growth was that in the last months of 2003 the funds of the large clients of the money funds drained into the banks, which, because of liquidity reserve problems, had

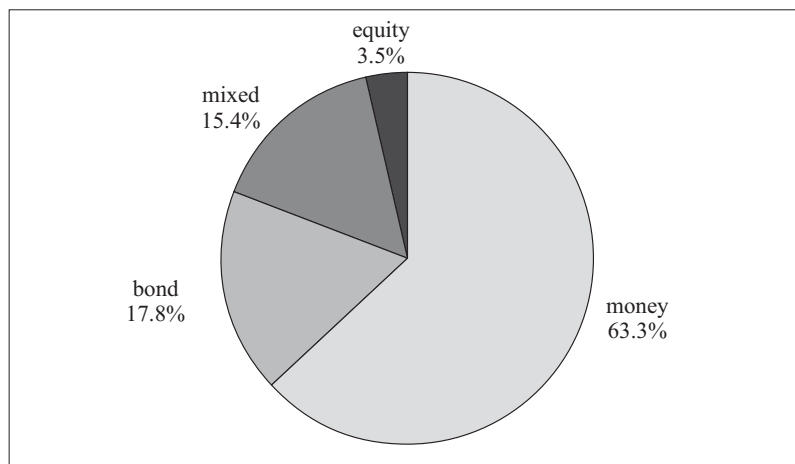
raised their interest rates on deposits from the corporate or institutional sector to over 8%. In 2004 again, nevertheless, a new rise in assets was recorded, of as much as 53%, and total assets in that month exceeded 4.5 billion kuna. For comparison, the assets of the insurance companies in the same year came to 14.4 billion kuna, and of the banks 225 billion. In comparison with GDP, which came to 207 billion kuna, we can see that the open-end funds were at the level of 2.2%. The minimum value of a stake in the open-end funds ranges from 400 to 50,000 kuna, depending on the kind of fund and the kind of investor, whether private or institutional.

*Graph 2 Assets of the open-end funds (in million kuna)*



Source: *Komisija za vrijednosne papire* (2004); treatment: authors.

*Graph 3 Market shares according to kinds of fund, 2003*



Source: *Komisija za vrijednosne papire* (2004); treatment: authors.

Of all the kinds of funds, the most popular in Croatia are the money funds. According to the Securities Commission report of 2004, there were 11 money funds in 2003, which accounted for about two thirds of total assets of all the open-end funds, or about 1.9 billion kuna. This was only slightly lower than in 2002. Bond funds had a share of 18% in 2003, about half a billion kuna, which was a considerable fall with respect to the previous year, when they had a market share of 25% or 0.6 billion kuna. Bond funds did not expect any major rise in Croatian bond issues, and they turned instead to investment in bills. Investment in equity funds still seems highly fraught with risk to investors, so that the assets of the equity funds remained more or less at the level of 3.5% of the total assets, or a bit more than 86 million kuna during 2002 and 2003. The major degree of risk associated with the equity funds will sometimes bring high yields, but the Croatian market is still not ready for large risk, which will probably change in the future. Mixed funds had a share of about 15% in 2003, a two-fold rise as against the previous year. Clearly the popularity of mixed funds is rising.

## **8 Fundamental statistical indicators of the open-end investment funds**

The average value of the net assets of the open-end investment funds at the end of 2004 was 110 million kuna. The average deviation from the mean, i.e., the standard deviation, was 168 million kuna. Half of the open-end investment funds had a net asset worth of 44 million kuna and more, while the value of the second half of the funds was lower than 44 million kuna. The most frequent value of the assets of a fund was 0 kuna. This results from funds having been founded and existing legally but without having started to operate, and thus having no assets collected.

The total net asset worth of the 41 open investment funds came to 4.5 billion kuna. The lowest value was 0 kuna, and the highest was 900 million kuna, and thus the total range between the highest and the lowest asset worth of the funds was equal to this greatest value.

*Table 2 Basic statistical indicators*

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Arithmetical mean	110.4
Median	44.7
Mode	0
Standard deviation	168.3
Range of variation	900.4
Minimum	0
Maximum	900.4
Aggregate	4,527.7
Number of elements	41

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*Source: Komisija za vrijednosne papire (2004); HGK (2004); treatment: authors.*



## 9 Concentration indicators

It is interesting to measure the concentration of the open-end investment funds. This is possible in several ways, but each way should lead to the same conclusion.

*Table 3 Net asset worth of the funds (in millions of kuna, December 31, 2004)*

Name of fund	Worth	Name of fund	Worth
GalileiFond	0.0	Victoria Fond	49.9
CIIOF-3	0.0	Select Europe	57.2
CIIOF-10	0.0	PBZ Euro Novčani fond	58.2
ST USD Bond	0.0	HI Cash	79.9
Iirika Jugoistočna Europa	0.8	Select Euro Bond	87.2
ST Balanced	0.9	ICF Fixed Income	94.3
ST Euro Bond	3.9	Select Novčani	108.5
HI-Conservative	4.3	PBZ Global fond	111.8
OrbisFond	5.0	ZB global	114.1
Global Equity	7.1	PBZ Kunski Novčani fond	141.6
Capital One	7.6	Raiffeisen Bonds	159.8
ICF Equity	7.7	ZB bond	225.4
HI-Growth	8.1	Raiffeisen Balanced	237.7
ST Global Equity	8.5	ZB europlus	242.0
HI-Balanced	9.9	ZB trend – otvoreni	265.9
ST Cash	12.9	Raiffeisen Cash	275.4
Erste International	23.7	Erste Money	305.5
Raiffeisen Active	31.6	PBZ Novčani fond	315.2
PBZ International Bond Fond	36.3	ICF Money Market	441.5
Erste Bond	43.4	ZB plus	900.4
ZB euroaktiv	44.7	Total	4.527.7

*Source: Komisija za vrijednosne papire (2004)*

The first concentration indicator is the Gini coefficient of concentration, which is calculated according to the following formula (Šošić, 1998; 2000):

$$G = \frac{2 \sum_{i=1}^N ix_i - (N+1) \sum_{i=1}^N x_i}{N \sum_{i=1}^N x_i} . \quad (1)$$

The Gini coefficient shows the degree of concentration. It moves in a range of 0 to 1, 0 indicating perfect distribution among all the members, and 1 meaning that the whole is concentrated on only one member. By substitution into the formula and calculation the Gini coefficient for the open-end funds (according to asset worth of the

funds) of 0.66132 is obtained, which shows a moderate to strong concentration in the assets of the funds.

Concentration can also be measured by the concentration ratio, which is calculated according to the formula (Šošić, 2004):

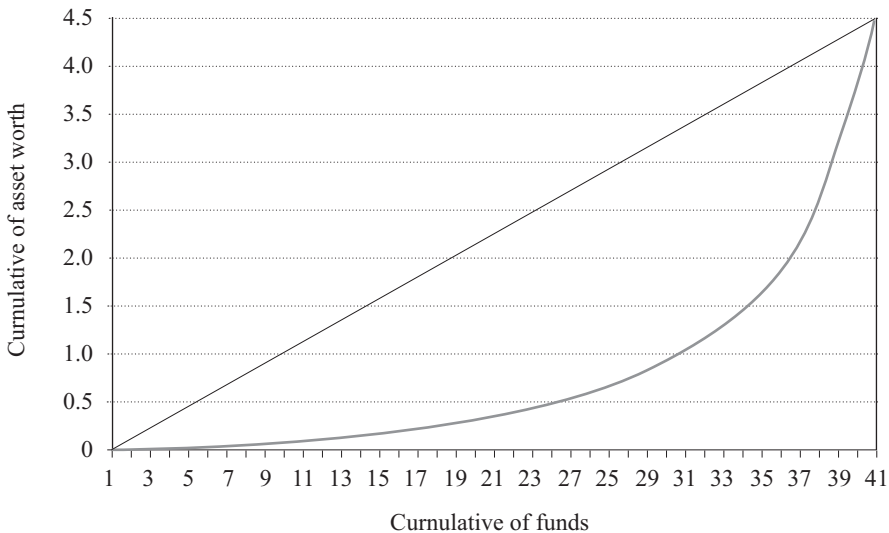
$$C_r = \frac{x_1 + x_2 + \dots + x_r}{\sum x_i}, \quad x_1 \geq x_2 \geq \dots \geq x_r \geq \dots \geq x_n. \quad (2)$$

By substitution into the formula and calculation the following values are obtained:

The concentration ratio shows the share of the r-members with the highest shares in the total observed set. Thus  $C_{10}$  shows the concentration of the asset worth of the ten leading funds according to the size of the actual assets. It shows that almost 78% of total assets of all the funds in Croatia is concentrated in the ten funds with the greatest asset worth. The  $C_5$  indicator, on the other hand, shows that the five biggest funds have accumulated practically 50% of the total assets of the funds.

Graphically, concentration can best be presented by the Lorenz curve, from which a considerable concentration of the assets of the investment funds in Croatia can also be seen (Šošić, 2002; Gogala, 2001). Within the bottom right angle of the square the Lorenz curve is found. The closer it is to the diagonal, the better the distribution. If it overlaps with the sides of the square (bottom and right), this shows that concentration is total, and that all the assets are located in just one fund.

Graph 4 The Lorenz curve



Source: Komisija za vrijednosne papire (2004); HGK (2004); treatment: authors.

## 10 Average yields

The following table shows the average yield per kind of fund and the appertaining standard deviation for the sample from which the value is calculated. Data of several representative funds from each group – mixed, equity, bond and money – are taken for the sample.

*Table 4 Average values of fund yields according to type*

Kind of fund	Average yield	Standard deviation of sample
mixed	8.66	4.28
equity	15.81	11.10
bond	5.16	1.15
money	4.27	1.01

*Source: Authors' calculations pursuant to data of average yields of the funds since their foundation to the end of 2004. Data acquired from the fund management firms.*

The average values for yields are calculated on the basis of several funds for each of the kinds included in the sample. The size of the assets of the fund itself is a crucial factor in the calculation, and the calculation is thus based on the arithmetical mean of arithmetical means:

$$\bar{X} = \frac{\sum_{i=1}^n f_i x_i}{\sum_{i=1}^n f_i}, \quad (3)$$

Where  $x$  is the average of annual yields for a given fund, and  $f$  is the value of the net worth of the fund on December 31 2004.

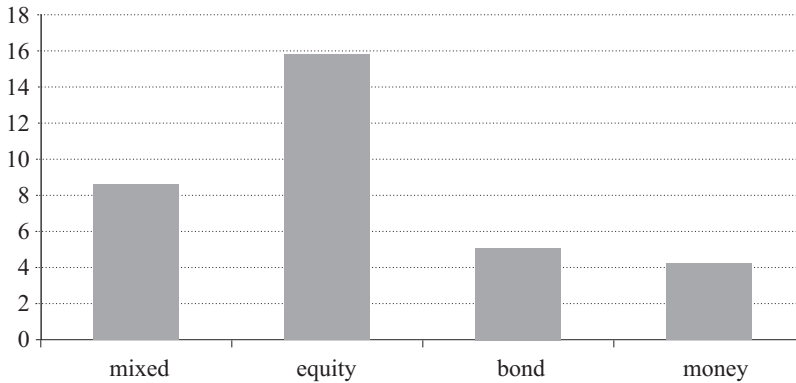
The standard deviation of the sample shows the average variance from the average for the calculated average value of a share, and is obtained by substitution into the formula:

$$\sigma = \sqrt{\frac{\sum_{i=1}^k f_i x_i^2 - \frac{1}{n} \left( \sum_{i=1}^k f_i x_i \right)^2}{n-1}}, \quad (4)$$

where  $k$  is the number of value pairs, and  $n$  is the aggregate of all net asset worths of funds that enter into the calculation of the sample.

In graphic terms, the average yields can now be compared.

Graph 5 The average annual yields of funds from the beginnings of their operation until the end of 2004 (in %)



Source: Author's own calculations from data about annual yields of funds from their foundation until the end of 2004; data obtained from the fund management companies.

It can be seen that, according to this sample, the equity funds are most worth investing in. They have the greatest average yield, after which come the mixed funds. The lowest yields are afforded by the money funds, only a little less than the yields of the bond funds.

Since yield is directly connected with risk, it is obvious that the equity funds are those most attended with risk. By contrast, the lowest amount of risk is associated with investment in the money funds.

Comparing these yields with the yields given by banks on savings, which mostly come to between 2.5% and 4%, we can see that these yields are nevertheless higher. However, a fixed interest is paid on savings, while the funds can even involve the risk of loss.

## 11 Conclusion

On the Croatian market, the investment funds are in the phase of development and positioning, which can be seen from the following indicators: a) the work of the investment funds is regulated by legal regulations; b) although only 13% of the public is well acquainted with the investment funds, as many as 75% of all people had heard of them, or knew something of them, and c) the total assets of the investment funds are constantly on the increase.

We wished in this paper to provide a reader-friendly analysis of the situation on the market for, above all, the open-end funds in Croatia. After a brief review of the legislative environment and the characteristics of the funds, we dealt with the issue of how well members of the public were acquainted with the opportunities for investment in them. The analysis showed that only a small portion of the population know these investment opportunities at all well. This kind of research should be carried out systematically so that

trends in this domain can be observed. A rise in the degree of public information will be the result of the activities of the management companies and their investment in presentation. Because of the large number of potential clients who, according to this research, are still not well enough acquainted with the funds, these companies have the potential to capture the market.

We classified Croatian funds according to type of investment, and as the number of funds rises, the number of them in each category is bound to rise. After that we analysed the trends in total assets of all the open-end investment funds in Croatia. From the comparative analysis it is clear that there is a constant rise in overall assets, which will certainly be interesting material for observation in future. The first subsequent comparison will be possible at the beginning of 2006, when the situation as of December 31 will be published. It will also be interesting to see how, if at all, the relative share of the individual categories of funds has changed. Probably, because of their great share at the moment of analysis, the money funds will still have the leading place in the structure.

We wanted to test out what market concentration in this country was like, and for this we used several statistical methods. The results always indicated the same thing: there is great concentration of assets in the funds, and the five largest funds have half the total assets.

At the end, pursuant to our own calculations, we analysed the average yields according to kinds of fund. We showed that the greatest yield was found in the equity funds and the lowest in the money. But since yield correlates positively with risk, investors need to decide carefully about the choice of fund. Investment in an equity fund can be quite rewarding, but it is necessary to assume much large risk, for, as the name says, it is shares that are being invested in. Conversely, the money funds have lower earnings, but with a much lower degree of risk.

All these data should be monitored on-goingly for they can change fairly rapidly, since the investment fund market in the country is only just starting to develop. This paper will make it easier for investors to make decisions about the kind of investment they want to make, and we have shown the investment funds that there is still room for development of the market. In future investigations into this topic, the paper can serve as a starting point because of its easily readable analysis of the state of affairs and development up to the end of 2004.

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