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Investment Funds in Poland and the USA – Selected Aspects

Introduction

According to K. Geert Rouwenhorst, the investment fund concept dates back to Europe in the late 1700s, when, as he describes in *The Origins of Mutual Funds*, “a Dutch merchant and broker, Adriaan van Ketwich, invited subscriptions from investors to form a trust (...) to provide an opportunity to diversify for small investors with limited means”¹. Nowadays, investment funds are one of the most popular common savings-products in the world. This form of financial investment is directed both at private, and institutional investors. Investing in funds seems to be a perfect solution for those who do not feel familiar with the workings of financial markets, or do not have enough time to find the best way of investing their savings but, on the other hand, wish to allocate corporate and personal funds.

This article is an attempt to present some aspects of the investment fund industry in Poland and in the USA. The selection of the American market for comparison was determined by the fact that American funds’ assets are the highest in the world. The Polish fund industry has existed for only 13 years. The authors focused on the assets of investment funds and channels of distribution in these countries.

The Structure of Household Savings

Since 2002 a considerable decrease in retail deposits has become evident in the Polish banking sector. Changes in consumer preferences, the flow of all kinds of interest rates set by the National Bank of Poland, taxation of income from interest, as well as the fast and complex development of alternative forms of investments, have caused a continuous decrease in household preference for traditional deposits. The structure of household savings has changed in favor of investment funds, bonds, insurance (especially with built-in investment funds or semi-bank deposits) and stocks (Figure 1). Those alternative forms are preferred by clients due to higher interest and for tax reasons.

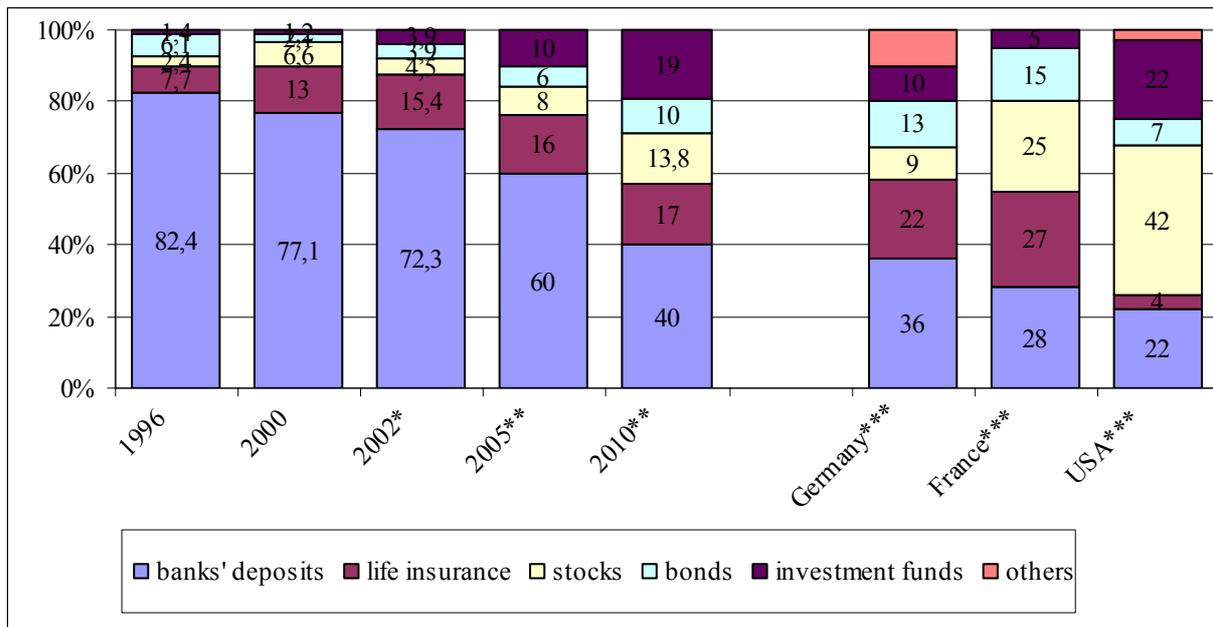
The paper contains some theses of the speech presented at the 9th International Conference of Doctoral Students *Plenty of Domains, One Aim, One Economy* on 4-6 July 2005 in the Nicolaus Copernicus University in Torun, Poland

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¹ K.G. Rouwenhorst, *The Origins of Mutual Funds*, „Yale International Center for Finance Working Paper” 2004, No. 04-48, p. 1.

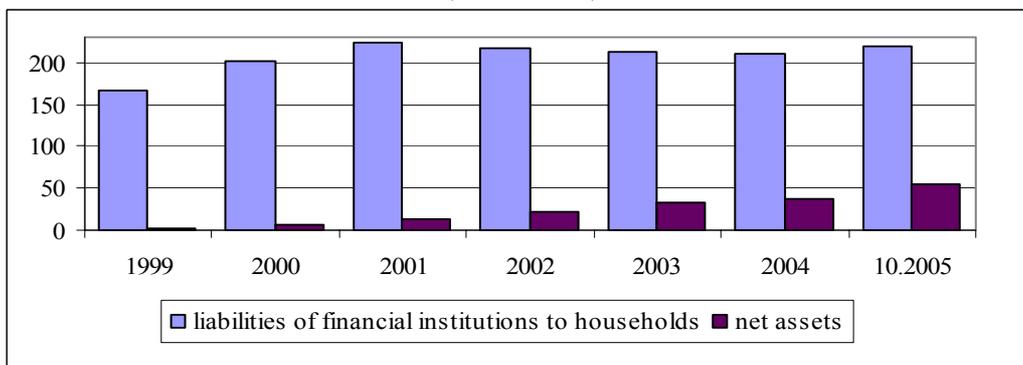
Figure 1. Structure of Household Savings in Poland and Selected Countries



Source: worked out by the authors on the basis of: *Fundusze przez Internet*, Educational Seminar, mBank, Warsaw 2003. * data on 30 VI 2002; ** forecast, *** actual data [sources:] GUS, NBP, PUNU, Rzeczpospolita.

Investment funds have gained about 54.2 billion PLN in retail savings as of the end of October 2005 (whereas liabilities of financial institutions to households amounted to over 200 billion PLN), and their assets continually grow faster than the whole Polish market (Figure 2)².

Figure 2. Net Assets of Investment Funds and Liabilities of Financial Institutions to Households in 1999-2005 (PLN billions)



Source: worked out by the authors on the basis of: *Raport 2004*, Izba Zarządzających Funduszami i Aktywami, p. 10 and NBP.

It is very difficult to predict the development path of the Polish savings market structure. More predictable changes are expected within channels of distribution of investment funds units and certificates.

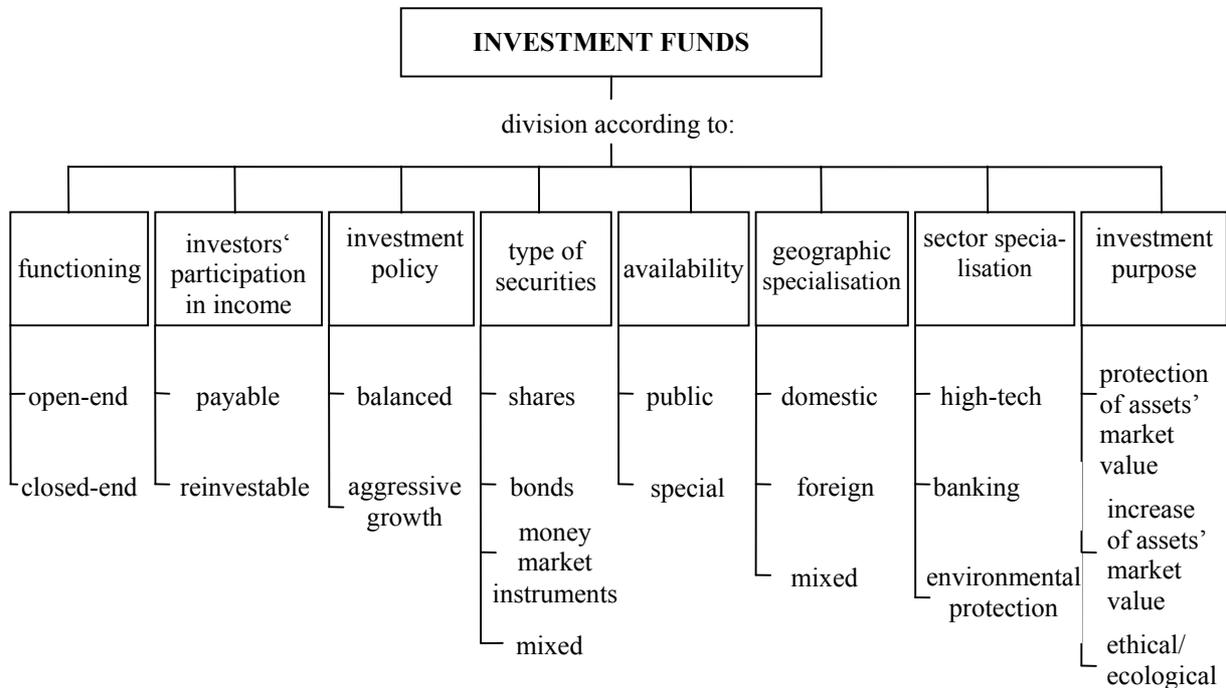
Types of Investment Funds

The range of investment funds provides investors various opportunities to invest on the financial market, taking into consideration individual investment preferences in the sphere of such risks as

² http://www.izfa.pl/dane/raport_2004.pdf

the expected return rate, operation line, geographical area and financial instruments, etc³. Their variety is an unquestioned advantage on the investment fund market (Figure 3).

Figure 3. Investment Funds Classification



Source: L. Dziawgo, *Eco-offers of Banks and Investment Funds. Poland & International Trends*, Wydawnictwo UMK, Toruń 2003, p.42.

Investment funds in the USA are highly regulated financial entities that must comply with federal laws and regulations. In particular, the Securities and Exchange Commission regulates investment funds under the Investment Company Act of 1940. The types of investment companies available to investors in the USA can be categorized into four main types:

- mutual funds (open-end investment funds),
- closed – end funds,
- exchange-traded funds (ETFs),
- unit investment trusts.

American “mutual funds” are management companies that (1) invest in diversified portfolios of assets; (2) are “open-end” in that they will redeem their shares at net asset value (NAV) at any time upon shareholder request. In other countries different names and definitions are used for similar businesses. The European Union, in an attempt to create a harmonized fund industry, has adopted a common definition of “Undertakings for Collective Investment in Transferable Securities” or UCITS.

UCITS are - by definition – the only open-end investment funds that are marketed to the public and can adopt the contractual, or the corporate guise. Outside the UCITS directive, Member States may allow other types of investment funds in their jurisdiction, which do not benefit from the European passport⁴. Among these the so-called “non-harmonized” investment funds (non-UCITS) are, in particular, closed-end funds. The Polish Act on Investment Funds is based on UCITS III directives⁵.

³ L. Dziawgo, *Eco-offers of Banks and Investment Funds. Poland & International Trends*, Wydawnictwo UMK, Toruń 2003, p. 41.

⁴ See: D. Krupa, *Investment funds in Poland against the European investments' funds market* (in Polish), Ph.D. Students Conference *Contemporary Tendencies in Economics*, Nicolaus Copernicus University in Torun, Torun 15 IV 2005.

⁵ UCITS III directives: the European directive 85/611/EEC of 20 XII 1985 and two directives: 2001/107/EC, 2001/108/EC of 21 I 2002.

The first investment fund in Poland was established in 1992⁶. The new Act on Investment Funds was passed on the 27th May, 2004. According to this Act, an investment fund is “a legal entity whose sole area of activity is the collective investment of capital raised from the public – and also through private offerings, in instances defined in the Act – of offering the sale of units or investment certificates, in the securities, money market instruments and other property rights defined in the Act”⁷.

The types of investment funds available to investors in Poland can be categorized according to the formal legislation. An investment fund may be formed as:

- an open-end investment fund;
- a specialized open-end investment fund;
- a closed-end investment fund.

Investment Fund Industry

An investment fund is created by a management company, which manages it and represents it in relations with third parties. In the first half of 2005 there were 20 management companies (TFI), and 159 investment funds in Poland. They accumulated 13.5 billion USD. Most of the assets were UCITS funds (net assets of non-UCITS accounted for about 5%). U.S.-registered investment companies managed 8.6 trillion USD at year-end 2004. Mutual funds, managing nearly 95% of total investment company assets, 8.1 trillion USD. By year-end 2004 closed-end fund assets totaled 254 billion USD, exchange-traded funds (ETFs) 226 billion USD, and unit investment trusts (UITs) 37 billion USD.

Mutual funds in the USA accumulate over 50% of the world’s open-end funds’ assets. In the second quarter of 2005 mutual funds in the USA managed over 8.2 trillion USD and the total amount of assets of open-end investment funds in Poland was 12 billion USD (Figure 4).

Figure 4. Total Net Assets of Open-End Fund by Type in the Second Quarter 2005 (USD millions)

	Total	Equity	Bond	Money Market	Balanced/Mixed	Other
World	16 405 558	7 129 020	3 334 099	3 080 296	1 456 554	213 503
United States	8 218 120	4 472 429	1 335 355	1 865 389	544 947	-
France	1 328 669	344 138	243 291	461 310	279 930	-
Germany	282 684	124 974	93 562	41 644	20 393	2 112
United Kingdom	492 721	365 587	81 911	4 602	40 622	-
Poland	12 908	1 415	5 157	1 857	4 460	19

Source: *Worldwide Investment Funds Assets and Flows. Trends in the Second Quarter 2005*, International Statistical Release, EFAMA 2005, p. 4.

In October 2005 the combined assets of mutual funds in the USA were 8 496 billion USD. A decrease of 92.5 billion USD has been observed since September⁸. The most popular funds in the USA are: stock funds, taxable money market funds, and taxable bond funds (Figure 5).

⁶ Exactly: 28th VII 1992, but earlier (28th II 1992) the Commission of the Securities and Stocks allowed the foundation of the first funds trust and accepted the regulations of the first fund managed by that trust.

⁷ *The Act on investment funds of 27 V 2004*, „Journal of Laws” 2004, No. 146, item 1546.

⁸ According to the Investment Company Institute’s official survey of the mutual fund industry, www.ici.org/stats/mf/trends_10_05.html#TopOfPage (2 XII 2005).

Figure 5. Total Net Assets of Mutual Funds in the USA (USD billions)

	October 2005	September 2005	% change	December 2004
Stock Funds	4 662,7	4 759,5	-2,0	4 384,1
Hybrid Funds	552,1	561,6	-1,7	519,3
Taxable Bond Funds	1 007,3	1015,6	-0,8	962,6
Municipal Bond Funds	337,6	339,6	-0,6	327,7
Taxable Money Market Funds	1 611,5	1 592,5	1,2	1 602,8
Tax-Free Money Market Funds	325,2	320,1	1,6	310,3
Total	8 496,4	8 588,9	-1,1	8 106,9

Source: Investment Company Institute, *Trends In Mutual Fund Investing October 2005*, ICI Statistics & Research, Washington, D.C., [HThttp://www.ici.org/stats/mf/trends_10_05.html](http://www.ici.org/stats/mf/trends_10_05.html) (29 XI 2005).

Shares which are offered by American mutual funds can be categorized into three main share classes (A, B, C), which differ in their combination of front-end and assets-based commissions. Strong competition has led to the decrease of sales loads and fees by 60% for equity fund share classes and 43% for bond fund share classes between 1980-2001⁹. Assets-based distribution fees (Rule 12b-1) consist of 48-49% of distribution costs for investors¹⁰. In the case of the advisory channel, one-time sales charges or annual 12b-1 fees account for 1-2% of assets per year. Some advisors charge an hourly fee. The supermarket channel, or a discount broker, is a non-transaction-fee program, which started in 1992. In addition, mutual funds pay these brokers for recordkeeping, a basic level of advice to customers and marketing.

A Shares class represents load-based shares. Commission is paid by the customer for the fund's distribution, and reaches up to 5% depending on the fund's type. A Shares do not charge fees in the money market funds, but in case of conversion they are deducted. Some funds can take an additional percent from reinvested dividends and capital gains. The Security Exchange Commission allows them to charge annually a maximum 100 basis points in assets-based fees. Typically, they set an annual commission of 25-35 basis points. Hypothetical total annual returns are shown in Figure 6.

B Shares class does not use front-end fees, but an annual 12b-1 fee (about 100 basis points) and a contingent deferred sales load (CDSL), which is usually 5% in the first year, 1% in the fifth year and 0% in the sixth or seventh year. Later B Shares are converted to A Shares, which allows them to decrease annual asset-based fees to 0.25-0.35%.

C Shares class has an annual 12b-1 fee amounting to 1%, and contingent deferred sales load (CDSL) of 1% only in the first year. Loads are served to fund distribution every year. This kind of mutual fund is appealing to investors, who prefer to have a chance to move easily between funds.

⁹ *Ibidem*, p.2.

¹⁰ *Ibidem*, p.3.

Figure 6. Hypothetical Total Annual Return on A, B and C Shares (in %)¹

Holding Period	A Shares²	B Shares³	C Shares⁴
1	2.64	3.08	7.08
2	5.72	6.21	8.08
3	6.77	7.21	8.08
4	7.30	7.48	8.08
5	7.62	7.78	8.08
6	7.83	7.96	8.08
7	7.98	8.08	8.08
8	8.10	8.08	8.08
9	8.19	8.17	8.08
10	8.26	8.24	8.08
11	8.32	8.30	8.08
12	8.36	8.35	8.08
13	8.40	8.39	8.08
14	8.44	8.43	8.08
15	8.47	8.46	8.08

¹Assumptions for all share classes: before expense return – 10%, non-distribution expense ratio, 0.75%; redemptions occur at end of holding period; ²front-end sales load – 5.75%; 12 b-1 fee – 0.25%. ³CDSL: 5% in year 1, 4% in year 2; 3% in year 3, 2% in year 5, 1% in year 6, 0% thereafter; 12b-1 fee – 1%; ⁴CDSL: 1% in year 1, 0% thereafter; 12b-1 fee – 1%.

Source: J. D. Rea, B. K. Reid, *Mutual Fund Distribution Channels and Distribution Costs*, “Perspective” 2003, No. 3, p. 12, by: Securities and Exchange Commission, www.sec.gov/investor/tools/mfcc/mfcc-int.htm

Models of Distribution Channels

A greater choice of available distribution channels through which fund companies can sell their products to retail investors is likely to have a positive influence on the size of the investment fund sector.¹¹

Investment fund units and certificates are usually distributed through traditional channels, for example: bank branches, financial institutions, brokerage houses, agent networks, and post offices. Within the next few months, post offices will be a new "street-side" distribution channel of investment funds in Poland. Recently, more and more units have been sold on the Internet by management companies, banks and independent brokers.

The offering of investment funds units or certificates on the Internet is dependent on national or European regulations. The *Directive concerning the remote marketing of consumer financial services* covers all financial services liable to be provided at a distance, e.g. by telephone, the Internet, fax, or mobile phone. By definition, a financial service is any service of a banking, credit, insurance, personal pension, investment or payment nature (article 2.b)¹². According to the same directive, a remote contract means any contract concerning financial services concluded between a supplier and a consumer under an organized remote sales or service-provision scheme run by the supplier, who, for the purpose of that contract, makes exclusive use of one or more means of remote communication up to, and including the time at which the contract is concluded¹³. Means of remote communication refers to any means which, without the simultaneous physical presence of the supplier and the consumer, may be used for the remote marketing of a service between those parties¹⁴.

Generally, discount brokers do not provide investment advice, and investors must undertake their own research when choosing a fund. However, discount brokers provide a variety of products and tools to assist client decision-making. They provide a convenient platform through which investors can research funds, obtain fund literature, and purchase fund shares. Discount brokers and all

¹¹ See: A. Khorana, H. Servaes, P. Tufano, *Explaining the Size of the Mutual Fund Industry Around the World, Negotiation, Organization and Markets Harvard University*, “Harvard University Working Paper” 2004, No. 03-23. p. 18.

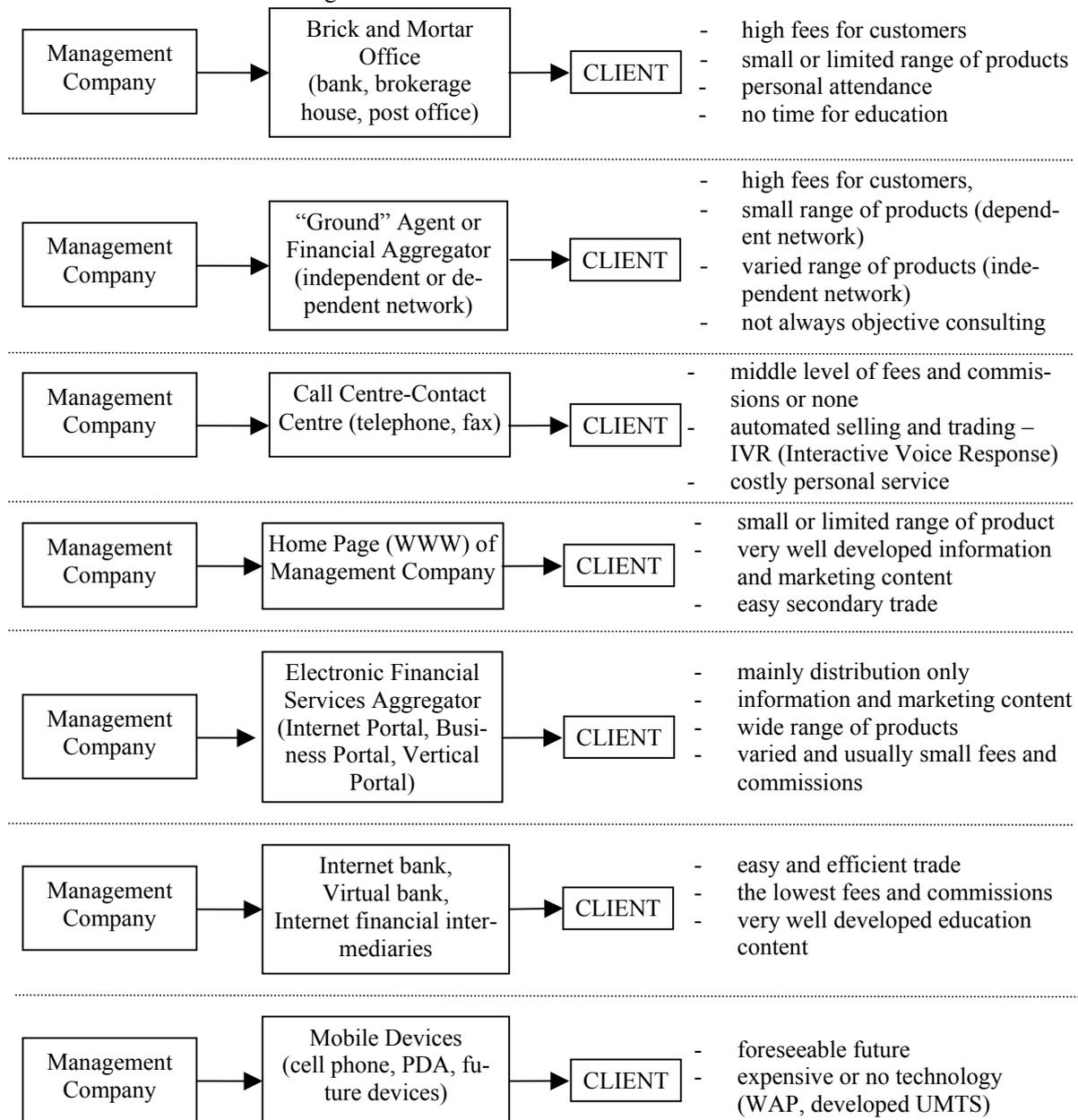
¹² DIRECTIVE 2002/65/EC, op. cit., p.19.

¹³ *Ibidem*, p.19.

¹⁴ *Ibidem*.

other kinds of online aggregators of financial services have natural transaction cost advantages for a management company, distributors and clients¹⁵.

Figure 7. Channels of Investment Fund Distribution



Source: worked out by the authors.

Distribution Channels in Poland

Almost all funds in Poland are distributed by traditional channels. Brokerage houses are most popular in selling investment funds and have gained about 50% of the market¹⁶. This is due to the fact that stock brokers are professionals who usually advise customers on this kind of investment in a bear market. Investment funds are also the easiest investment alternative for trading directly in the stock exchange, and do not require as much time and knowledge as stocks. The clients of investment funds

¹⁵ See: T. Kozlinski, *Transaction Cost Economics of Creators and Aggregators of Financial Services in the Internet* (in Polish), Ph.D. Students Conference *Contemporary Tendencies in Economics*, Nicolaus Copernicus University in Torun, Torun 15 IV 2005.

¹⁶ *Fundusze przez Internet*, Educational Seminar, mBank, Warsaw 25 III 2003., *Supermarket funduszy inwestycyjnych – nowa jakość w finansach osobistych*. Open Finance mBank, Educational Seminar, mBank, Warsaw 19 V 2004.

also include professionals, rich families, and wealthy individuals. Those groups have much in common with the clients of private banking, and personal contact is crucial in the investment service model. About 28% of funds are sold in traditional bank branches, mainly of the same capital group. Ground agents of independent or dependent networks distribute about 20% of all investment funds units or certificates. Remote channels of distribution, such as the Internet and contact centers, are not popular in Poland yet. In 2003 only about 2% of funds were sold this way. This situation will have to change soon because mBank Funds Supermarket and other Internet channels captured nearly 5% of shares in new total assets for the year 2004¹⁷.

Figure 8. The Internet Channels of Distributions of Polish Investment Funds

Management Company	Management Company Home Page - Selling	Internet/Virtual banks			Internet Financial Intermediaries
		mBank Funds Supermarket	MultiBank Saving Center	VOLKSWAGEN BANK direct	Obsługa Funduszy Inwestycyjnych Sp. Z o.o. iNetTrade
AIG	Transaction and Information Service STI				
BPH	Internet Bank System Sez@m	+	+		
BZ WBK AIB					
CU	+				+
Copernicus Capital					
DWS Polska	+	+	+		+
GTFI	+	+	+	+	+
ING	+				+
KBC	+	+	+		+
Millennium					
Opera					
Pionier PEKAO					
PKO/CS	Internet Bank System Inteligo				+
SEB	+	+	+	+	+
SKARBIEC	Transaction and Information Service STI	+	+		
ALLIANZ	+	+	+	+	+
BH		+	+		
PZU		+	+		
SKOK					
Union-Investment	Transaction and Information Service UniSieć				

Source: worked out by the authors (2 VII 2005).

Internet-based channels of distribution usually don't involve fees or commissions for clients. This is the most convenient way of trading and converting funds for active and qualified investors. In traditional channels all customers have to pay a special distribution fee (about 2-5%), and in addition a 2-3% annual fee for asset management. Aggregators and financial intermediaries also charge fees, covered by management companies or clients. Fees for management are usually added to the daily price of investment fund units. Traditional brokerage houses take almost all distribution fees (1-2%)

¹⁷ Ibidem.

and about a third of the fee for management. This explains why the costs of distribution by remote channels are so low, and why rational customers prefer this way of investing. Moreover, this method of offering products is also very profitable for management companies. MBank Funds Supermarket is a successful venture, which has attracted over 100 thousand investors and gained 400 million PLN in assets within 2.5 years of its activity, as of the end of the first half of 2005¹⁸.

Mutual Fund Distribution Channels in the USA

In the 1980s and 1990s, funds in the USA were sold mainly through personal selling or directly to investors. There has been a considerable decrease in the average cost of distribution services caused by strong competition between mutual funds, beneficial retirement regulations of the 401(k) plan and a wider range of professional advice offered to customers. There are five main types of distribution models in the USA: the direct channel, the advisory channel, the retirement plan channel, the discount brokerage channel and the institutional channel¹⁹. The first four are dedicated to retail, and the last to institutional investors. In the direct channel, investors deal directly with mutual funds by mail, phone, the Internet (contact centre – personal or IVR) or customer service centers. In other models investors can use third party intermediaries' networks or software tools. Third party specialized organizations could also be hired by mutual funds to distribute products. Advisers could work for all types of financial institutions: securities firms, banks, insurance agencies and financial planning firms. Their income is constituted by sales commissions (loads) and asset-based fees. The retirement plan channel of distribution is a long-term investing program for individuals, where funds are continually deducted by an employer from salary. The supermarket channel in the USA means an independent broker, who sells a large number of funds without transaction charges or sales loads at a discount. The institutional channel of distribution is provided to businesses, trusts, financial institutions, foundations and charities. Open-end funds can be categorized into five types, which are presented in Figure 9.

¹⁸ *Biuletyn użytkowników SFI 2005*, No 3, p. 1-2.

¹⁹ J.D. Rea, B.K. Reid, *Mutual Fund Distribution Channels and Distribution Costs*, "Perspective" 2003, No. 3, p. 2.

Figure 9. Principal Features of Mutual Fund Distribution Channels

Channel	Principal Investors Using the Channel	Companies or Organizations Providing Transaction Services	Method of Conducting Share Transactions	Mutual Funds Offered in the Channel	Investor Services
Direct	Individual investors	Mutual fund companies	Transaction orders placed directly with mutual fund companies by mail, telephone, Internet or at customer-service centers	Mutual funds of the fund company offering direct transactions	Investment information
Advice	Individual investors	Full-service securities firms, registered investment advisor firms and insurance agencies	Transaction orders placed with representatives of firms providing transaction services who transmit orders to fund companies	Mutual funds from a large number of fund companies	Investment information, advice, and ongoing assistance, access to funds from different companies within one account
Retirement Plan	Participants in defined contribution plans	Plan sponsor or employer	Transaction orders placed with plan administrators who transmit orders to fund companies	Limited number of mutual funds selected by plan sponsor	Investment information
Supermarket	Individual investors and registered investment advisers acting on behalf of individual investors	Discount brokers	Transaction orders placed with discount brokers who transmit orders to fund companies	Mutual funds from a large number of fund companies	Investment information, access to funds from different fund companies within one account
Institutional	Trusts, businesses, financial institutions, endowments, and other institutional investors	Mutual fund companies	Direct contact with mutual fund companies or with agents of the fund companies	Mutual funds of the fund companies offering direct transactions	Investment information

Source: worked out by the authors on the basis of: J.D. Rea, B.K. Reid, *Mutual Fund Distribution Channels and Distribution Costs*, "Perspective" 2003, No. 3, p. 4.

The most popular ways of purchasing funds are the advisory channel (55%), the retirement plan system (16%, about 1 trillion USD), the institutional channel (13%), direct sales (12%), and finally the supermarket channel (5%) as of the end of 2002²⁰. From the household point of view the participation in funds takes place mostly through the retirement plan (48%), the advisory channel (37%), the direct channel (10%) and supermarket channel (5%).

Mutual fund distribution channels in the USA are related to various classes of shares offered by mutual funds. In 2002, more than half of all mutual funds had two or more share classes with different distribution, service and expense arrangements. These multi-class mutual funds give investors several ways to pay for the services provided by financial advisors.

Summary

Assets of investment funds are sharply increasing in Poland and the USA, and this kind of common investment is becoming more and more important. There are about 200 investment funds in Poland, and several thousands in the USA.

The changes in the distribution of investment funds during the last few years have allowed investors to choose from a wider range of services, and provided better access to investment funds than ever before. Internet channels of distribution will probably not dominate traditional ways of selling investment funds, but nonetheless have a great potential for the future. Strong competition results in a considerable decrease of commissions and asset-based fees, yet this system becomes more complicated and less transparent for investors.

References

1. *Biuletyn użytkowników SFI 2005*, No. 3.
2. *Directive 2000/31/EC of 8 VI 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce)*, Official Journal of the European Communities L 178, 17 VII 2000
3. *Directive 2002/65/EC of 23 VIII 2002 concerning the distance marketing of consumer financial services and amending Council Directive 90/619/EEC and Directives 97/7/EC and 98/27/EC*, Official Journal of the European Communities L 271, 9 X 2002.
4. Dziawgo L., *Eco-offers of Banks and Investment Funds. Poland & International Trends*, Wydawnictwo UMK, Toruń 2003.
5. *Fundusze przez Internet*, Educational Seminar, mBank, Warsaw 25 III 2003.
6. Khorana A., Servaes H., Tufano P., *Explaining the Size of the Mutual Fund Industry Around the World, Negotiation, Organization and Markets Harvard University*, "Harvard University Working Paper" 2004, No. 03-23.
7. Kozlinski T., *Transaction Cost Economics of Creators and Aggregators of Financial Services in the Internet* (in Polish), Ph.D. Students Conference *Contemporary Tendencies in Economics*, Nicholas Copernicus University in Torun, Torun 15 IV 2005.
8. Krupa D., *Investment funds in Poland against the European investments' funds market* (in Polish), Ph.D. Students Conference *Contemporary Tendencies in Economics*, Nicholas Copernicus University in Torun, Torun 15.04.2005.
9. *Raport 2004* (in Polish), Izba Zarządzających Funduszami i Aktywami, 2005.
10. Rea J.D., Reid B.K., *Mutual Fund Distribution Channels and Distribution Costs*, "Perspective" 2003, No. 3, Investment Company Institute.
11. Rea J.D., Reid B.K., Lee T., *Mutual Fund Costs 1980-1998*, "Perspective" 1999, No. 4, Investment Company Institute.
12. Rouwenhorst K.G., *The Origins of Mutual Funds*, "Yale International Center for Finance Working Paper" 2004, No. 04-48.
13. *Supermarket funduszy inwestycyjnych – nowa jakość w finansach osobistych. Open Finance mBank*, Educational Seminar, mBank, Warsaw 19 V 2004.
14. *The Act on investment funds of 27 V 2004*, "Journal of Laws" 2004, No. 146, item 1546.
15. <http://www.izfa.pl>
16. <http://www.mbank.pl>
17. <http://www.sec.gov>

²⁰ *Ibidem*, p.3.