Performance of Microfinance Investment Vehicles[1]

Karel JANDA – Barbora SVÁROVSKÁ***

Abstract

In this article we introduce microfinance investment funds as financially viable socially responsible investment. We provide a brief overview of the microfinance investment funds that are the most relevant to a commercially oriented investor who is besides the socially responsible aspect of this type of investment interested in the financial benefits of the inclusion of these funds into his personal investment portfolio. In regard to the dependence of returns of microfinance funds on the performance of stock and fixed income markets in developed and emerging economies we find slightly negative correlation. We also show that microfinance investment funds provide modest but in time stable returns compared to benchmark market indices.

Keywords: *microfinance, investment, funds, risk, return*

JEL Classification: G11, G21

Introduction

This paper is dealing with the problem of providing resources to microfinance banks and institutions through specialized financial intermediaries that are collectively referred to as the microfinance investment vehicles (MIVs). We provide a description of the studied sample of microfinance funds[2] and compare

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[2] The term *microfinance fund* is commonly used instead of investment vehicle despite the fact that in the legal sense many of them are not necessarily investment funds in the proper sense of the term as it is widely understood in financial markets (e.g. mutual funds) (Svárovská, 2009). We shall use the terms MIVs and *funds* interchangeably if not specified otherwise.

them with benchmark market indices. The aim of this study is to introduce microfinance investment funds as an investment alternative against pure stock and bond portfolio. The major finding of the empirical part of the paper is that microfinance investment funds provide modest but in time stable returns compared to benchmark market indices. Negative correlations of microfinance funds to market benchmarks suggest an opportunity to balance investor's risk profile by an addition of microfinance assets to a portfolio.

The modern microfinance movement emerged in the early 1970s based on two independent pioneering initiatives in Latin America and Bangladesh. Microfinance has become the most known, however, after Bangladeshi professor Muhammad Yunus and the Grameen Bank that he set up were jointly awarded the Nobel Peace Prize for their efforts to create economic and social development from below in 2006.

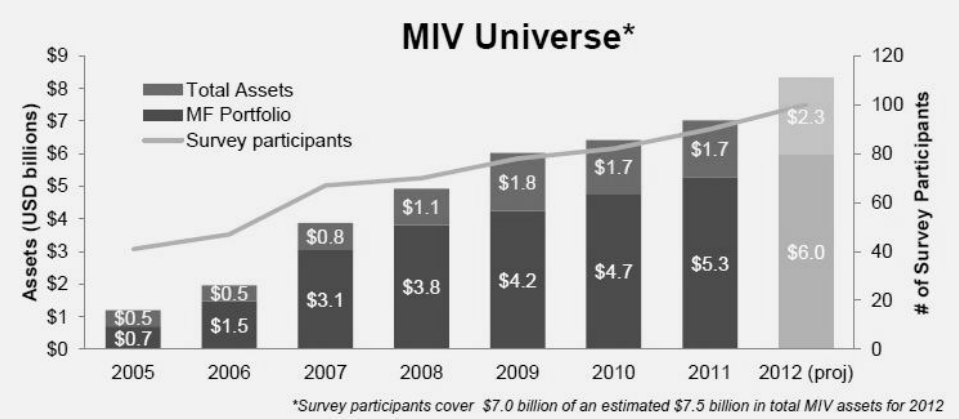
There have been numerous attempts to extend microfinance movement from developing into developed and post-socialist European countries. Up to date, these attempts were not as successful as in other geographies as far as the principal microcredit business scheme is concerned. The lack of progress of microcredit in these affluent or relatively affluent European countries is primarily caused by insufficient opportunities for very small investments to lead to tangible small business activities in these countries. Nevertheless, there exists a very realistic development opportunity for microfinance in the European post-socialist transition countries. But this opportunity is not on the borrowing side of microfinance. It is on the lending side, in the form of socially responsible investments into microfinance.

Most microfinance institutions (MFIs), especially in their early years, were originally founded as nongovernmental (i.e. non-profit and non-regulated) organizations financially relying on donors and international development organizations. Current microfinance sector is, however, partially characterized by commercialization of microfinance and transformation of originally NGO-managed institutions into for-profit institutions integrated within the formal financial system (see for example Christen and Drake, 2002; Lauer, 2008 and Ledgerwood and White, 2006 for details).

MFIs' operation and expansion of activities often require in addition to retained profits and deposit collection also external forms of funding. These external sources come mainly from private capital placements and from debt financing (including direct loans provided to MFIs, bond issuance and other debt-related instruments such as the collateralized debt obligations). The current trend of transformation and commercialization of the microfinance leads to the emergence of more commercially viable MFIs that are likely to attract foreign

investors. According to Forster and Reille (2008), approximately half of all investment in microfinance from developed countries is channeled to MFIs through microfinance investment vehicles. MIVs propose a collective investment in a large spectrum of microfinance institution.

F i g u r e 1
Microfinance Investment Vehicles



Notes: Figures are based on annual survey carried out by MicroRate, a rating agency dedicated to the evaluation of microfinance institutions and microfinance investment vehicles. These surveys do not reflect figures for all existing MIVs, but only for those MIVs that decide to share their financial data. Therefore, the above figures may be slightly underestimated.

Source: MicroRate (2012).

Figure 1 reflects recent development in the sector of microfinance investment funds. As at December 31, 2011 there were 102 MIVs of different legal structures worldwide with estimated volume of assets under management of approx. USD 7.5 billion (MicroRate, 2012).

1. Microfinance Literature Review

Majority of literature on microfinance deals directly with microfinance institutions providing microloans and other service to customers usually excluded from mainstream credit markets. For example Bauer, Chytilová and Morduch (2012) use experimental measures of time discounting and risk aversion for villagers in south India to highlight behavioral features of microcredit as a financial tool designed to reduce poverty and fix credit market imperfections. They show that microcredit contracts may do more than reduce moral hazard and adverse selection by imposing new forms of discipline on borrowers. Bauer, Chytilová and Morduch (2012) find that, conditional on borrowing

from any source, women with present-biased preferences are more likely than others to borrow through microcredit institutions. Another particular contribution of microcredit may thus be to provide helpful structure for borrowers seeking self-discipline. This shows that mainstream literature on microfinance deals primarily with market imperfections like insufficient liquidity (Vrábel, Teplý and Černohorská, 2012) or with risk management (Málek et al., 2010; 2012).

Nevertheless, there already exist a few papers dealing with investing into microfinance. But as opposed to our concentration on MIVs, the existing literature is almost exclusively oriented on direct investing into MFIs. This is quite understandable since MIVs are quite recent phenomenon, which besides other things means that there was not enough data for their analysis available. Krauss and Walter examine the correlation of microfinance institutions' performance to international as well as to respective local markets with an objective to find out whether an addition of microfinance assets to portfolio represents a useful opportunity for a portfolio diversification seeking investor. Kraus and Walter concluded, that "MFIs may have useful diversification value for international portfolio investors able to diversify away from country risk exposures. For emerging market domestic investors, who may have this ability to a much more limited extent, domestic microfinance investments do not seem to provide significant portfolio diversification advantages" (Kraus and Walter, 2009).

Gonzalez (2007) conducted an empirical study on MFIs' assets quality as a proxy for the risk of MFI portfolios that focuses on its resilience to national macroeconomic shocks measured by changes in GNI (Gross National Income) per capita. His data set consists of data on four portfolio risk indicators (portfolio-at-risk measures (PaR 30 and PaR 90),[3] loan-loss rate and the write-off ratio) of 639 MFIs in 88 countries mainly for the period 1999 – 2005. Gonzalez confirms a rather strong resilience of microfinance institutions to domestic economy.

Ahlin, Lin and Maio (2011) also attempt to place microfinance institutions in the national context examining whether and how a MFI's success is dependent on the macroeconomic and institutional structure and outcomes of the country where it is located. On a sample of 373 MFIs worldwide they find that in general the country context (in terms of broader economy performance and macro-institutional environment) appears to be an important determinant of MFI performance. Ahlin, Lin and Maio suggest that when growth is stronger MFIs are more likely to cover costs and that breaking even appears (at least up to some point)

[3] PaR 30 and PaR 90 relates to portfolio at risk (i.e. share of loans overdue) for more than 30 and 90 days respectively.

easier to do in richer countries. “Deeper financial sector is associated with lower operating costs, lower default, and lower interest rates, suggesting that broad financial competition does benefit microborrowers.” On the other hand, they find also signs of rivalry between microfinance and industrial-led growth. “Work-force participation and manufacturing’s share of GDP predict slower growth in outreach of MFIs. Also, MFIs don’t always do better, and sometimes seem to do substantially worse when institutional environment is more developed” (Ahlin, Lin and Maio, 2011).

Galema, Lensink and Spierdijk (2011) investigate whether an inclusion of microfinance to a portfolio of risky international assets (equity and bond investment) is beneficial and yields diversification gains. Their analysis is based on the mean-variance spanning test that relies on the assumption that investment decisions of investors are solely made on the basis of the mean-variance properties of assets. The analysis suggests that, in general, microfinance may be attractive for investors seeking a better risk-return profile and more specifically that microfinance investment may be valuable as an addition to the debt part of a globally diversified portfolio.

Koivulehto (2007) aims to find out if microloans generate sufficient returns when confronted with a competitive environment, where capital owners can choose between different investment opportunities (e.g. corporate or government bonds). Janda and Svárovská (2010) investigate a monthly performance of five commercial microfinance investment funds and their currency sub-funds (USD, EUR and CHF) from January 31, 2006 until March 31, 2009 in comparison with selected bond and equity indices.

2. Data

2.1. Microfinance Funds’ Data

In order to find out more about the attractiveness of microfinance for investors we study monthly returns of 21 selected open-end microfinance investment funds from January 2006 to September 2010. Fifteen of them are denominated in EUR, while the remaining six are USD denominated funds. Historical data about net asset values of studied funds per share (hereinafter the “NAV”) were obtained from Bloomberg. Additional data on microfinance investment funds were collected from funds’ prospectuses, websites, and monthly and annual reports.

The microfinance investment vehicles universe comprehends according to an annual survey carried out by MicroRate 102 MIVs of different investment

structures (as of December 31, 2011) (MicroRate, 2012). Therefore, we may not claim that the chosen funds include the entire universe of investment vehicles in microfinance. The inclusion of funds in the studied sample was based on three criteria:

- *Availability and quality of data*. We selected funds from which NAVs are either publicly available or could be accessed by Bloomberg. An additional criterion was the reporting of the NAV on at least a monthly basis.
- *Commercial funds*. In terms of fund's commercial orientation the microfinance literature distinguishes mostly three types of funds: (1) Commercial MIVs taking form of investment funds or investment companies providing loans at market conditions and seeking financial returns. These funds target financially sustainable MFIs and invest mainly in debt instruments. (2) Quasi-commercial/ dual-objective funds that strive to balance development objectives with modest financial returns while maintaining their borrowing conditions below or close to the market. Their target group may include microfinance institutions that are close to become sustainable. The share of equity holdings in MFIs is in general greater than in the first group of funds. (3) Development funds that provide funds at subsidized conditions and where main contributors are NGOs (Non--governmental Organization), foundations or charity organizations who seek social returns in the first place (based on Goodman, 2007).

Microfinance investment vehicles that are subject of this study fall within the group of commercial MIVs that focus mainly on financial objectives while their social and development contribution is a sort of value added that sets these funds apart of traditional mutual funds. (Svárovská, 2009).

- *Structure of investment vehicle*. We include solely funds that are structured as open-end mutual funds or its parallels depending on the country of origin offering redemption rights at any time during the course of investment.

In our view, funds that were included in the studied sample rank among the most developed funds with transparent portfolio structure and clearly defined financial and social objectives. These are funds that a commercially oriented investor who is not familiar with the microfinance sector would, in our opinion, consider.

In calculation of monthly returns the net asset values of studied funds per share (NAV) were used. For most of the funds the net asset values are calculated on a fixed valuation day once or twice a month (see Table 2 for details). Therefore, the monthly periodicity of data seemed to be the most feasible. The NAV per share is the price that an investor pays for a share of the fund and that he/she is paid when redeeming fund's shares. Therefore, the change in the NAV reflects

the actual returns of an investor[4] as opposed to previous papers on investment in microfinance looking at annual book values of MFIs' assets and other performance ratios based on MFIs' annual financial reports.

All funds' returns are reinvested and thus MIVs' returns did not have to be in any way adjusted. Returns are net of management expenses and administrative fees but disregard subscription and exit fees if applicable and are before taxes. In our analysis, we use basic return formula (equation 1) as well as natural log return formula (equation 2) to minimize the effect of possible outlier observations on returns.[5]

$$r_t = \left(X_t - X_{t-1} \right) \Big/ X_{t-1} \tag{1}$$

$$r_t^{\ln} = \ln\left(X_t / X_{t-1} \right) \tag{2}$$

where X_t refers either to the net asset value of a microfinance fund in time *t* or to the index level of a given market benchmark in time *t*.

2.2. Performance Benchmarks and the Risk-free Rate

In our study, we aim to compare the returns on the microfinance investment funds with returns on certain benchmark indices that are likely to represent the main alternative to microfinance engagement. We use multiple indices as proxies for the standard market strategies in order to account for multiple investment alternatives of a potential investor and to augment the robustness of our results. The majority of the studied funds may provide loans to MFIs and may invest in debt instruments as well as may acquire equity stakes in MFIs. Therefore, we use both stock indices as well as fixed income benchmarks. The use of equity indices may be specifically justified by the common feature of stocks and microfinance assets that may attract the same type of investors who are not necessarily risk-averse.

Microfinance funds in the sample differ in their legal domicile and may target investors from different European countries. In many cases funds are located in Luxembourg or Switzerland (due to tax purposes, favorable legal and regulatory environment as well as high concentration of specialized service providers)[6] but

[4] Before related management and other fees if applicable and before taxes.

[5] A graphical analysis has not shown a presence of outliers in case of returns of microfinance investment funds. Nevertheless the use of natural log return formula is justified especially for the benchmark indices' returns that could be prone to outliers.

[6] Fund managers choose Luxembourg as domiciles for their funds mainly because of favorable tax environment. Funds set up as a Part II Fund (all in our sample) benefit in Luxembourg from the exemption from income tax, net wealth tax, withholding tax on dividends and capital gains (except for cases when EU Savings Directive applies) as well as no VAT is paid on management fees.

they target clients from other EU countries, most often France, Belgium, the Netherlands or the UK.[7] We reflect the fact that potential investors originate from different European countries with well-developed financial markets and thus require a yield that could be achieved on their local markets by the choice of broader European and world indices instead of choosing purely Luxembourgish or Swiss equity and fixed income benchmarks as proxies for the market portfolio. The nature of underlying investment of microfinance funds in the sample, i.e. provision of loans to and investment in equity stakes of microfinance institutions worldwide, but most frequently in Latin America, Eastern Europe and Asia (see Table 2 for the geographic breakdown of underlying investment projects of MIVs in the studied sample) is underlined by an addition of emerging markets proxies. The regional focus simulates additional market risk of such investment related to political and economic issues as well as currency risks.

Global bond markets are proxied by Markit iBoxx EUR Liquid Corporates Index reflecting yields on EUR denominated highly liquid corporate bonds. In order to examine the performance of microfinance funds with respect to the emerging fixed income markets we use the J.P. Morgan Emerging Market Bond Index Plus (hereinafter "J.P. Morgan EMBI+") intended to replicate the total returns of traded external debt instruments in the emerging economies. To describe the stock market we consider the Morgan Stanley Capital International (hereinafter "MSCI") World Index that is designed to measure equity market performance of developed markets (Index definitions: <http://www.mscibarra.com>). In addition to looking at the risk and return characteristics of MIVs in the light of global stock markets, we also compare them to emerging markets stocks proxied by MSCI Emerging Markets Index (hereinafter "MSCI EM"). The MSCI EM Index covers regions which are often represented in portfolios of studied microfinance funds such as India, countries of Southeast Asia, Mexico and South American countries like Brazil, Chile, Colombia or Peru (Index definitions: <http://www.mscibarra.com>). Returns on benchmark indices are calculated according to return formulas in equations 1 and 2. Bloomberg and Markit were the source for all data on the indices' levels.

Trend of concentration of microfinance funds in Luxembourg is likely to continue as the Luxembourg Government decided in 2010 to exempt microfinance investment funds from the only tax they were subject to – the subscription tax of either 0.01% or 0.05% of NAV depending on instruments a fund invests in – in order to encourage the development of this fund type in Luxembourg (Association of the Luxembourg Fund Industry, 2010).

[7] Information about the target investors' nationalities of microfinance funds in the sample are based either on information cited on fund's websites or such assumptions are derived from information given in funds' prospectuses about the eligible countries where shares of given funds may be sold (i.e. the offering of shares of certain funds may be restricted in certain jurisdictions).

Microfinance investment funds in the sample are denoted in EUR and in the USD. Therefore, for the purpose of the correlation analysis we distinguish two microfinance portfolios for which we perform the analysis separately. In order to reach consistent results of given microfinance investment options we use two different risk-free rates – one denominated in EUR and second in USD. The risk-free returns are most commonly proxied by yields on government securities of the currency in question. We apply yields on 10Y German government bonds and 10Y U.S. government bonds for the EUR and the USD microfinance portfolios respectively. Data for risk-free rates were acquired using Bloomberg.

3. Descriptive Evidence on the Performance of Microfinance Funds

Before presenting the descriptive analysis of fund's financial performance with respect to chosen benchmarks, we first provide a brief profile of microfinance investment funds in general and as used in our study.

T a b l e 1

Median Credit Risk of Microfinance Institutions

		2004	2005	2006	2007	2008
Portfolio at Risk > 30 Days	%	2.1	2.2	2.8	2.7	3.1
Portfolio at Risk > 90 Days	%	0.9	1.0	1.4	1.4	1.6
Write-off Ratio	%	1.3	1.3	1.1	1.1	1.0
Loan Loss Rate	%	1.0	1.0	0.9	1.0	0.8
Number of MFIs included in the sample		302	446	704	890	1 084

Notes: Portfolio at Risk > 30 (90) Days = (portfolio overdue more than 30 (90) days + renegotiated portfolio) / adjusted gross loan portfolio; Write-off Ratio = value of loans written off / average gross loan portfolio; Loan Loss Rate = (value of loans written off-loans recovered) / average gross loan portfolio.

While the total number of existing MFIs was calculated on 2 420 institutions as of December 2008, figures in the table are based on data of those MFIs that voluntarily report to the MIX Market database. Such bias does not matter to our issue as these MFIs are also likely to attract foreign capital and are therefore of our interest.

Source: Microfinance Information Exchange, Inc. (2004 – 2008).

Table 1 provides overview of the credit risk of microfinance institutions. We find that the share of loans for which borrowers were late with repayment for more than 30 days (i.e. share of portfolio at risk) has been increasing from 2005 to 2008. Increased share of portfolio at risk (3.1% in 2008), however, did not have any repercussions on the overall value of written-off loans in respective years with median loan loss rates reaching up to 1% of average gross loan portfolio over the above mentioned time span. As a point of reference, the general rule of thumb in microcredit is that annual loan losses of more 5% tend to become unsustainable (Gonzalez, Narain and Rosenberg, 2009).

T a b l e 2 **– Overview of Studied Microfinance Investment Funds (in %)**

MIV	Currency/Class	Legal Status	Inception Date (liquidation date)	Assets				Minimum Investment	NAV Calculation
				Fund assets (net asset value)	Fund assets allocated to MF investments	% of fund assets allocated to MF investments	as of (date)		
responsAbility Global Microfinance Fund	EUR USD	FCP – Part II	Nov-03	502 226 258 USD	364 681 596 USD	72.6	30-Sep-10	1 000 EUR 1 000 USD	on the last Luxembourg banking day of the month
responsAbility Mikrofinanz Fund	EUR	SICAV – Part II	May-07	105 932 985 EUR	85 511 426 EUR	80.7	30-Sep-10	1 000 EUR	
responsAbility Microfinance Leaders Fund	USD	SICAV – Part II	Nov-06	145 407 702 USD	111 847 320 USD	76.9	30-Sep-10	1 000 000 USD	
Dual Return/Vision Microfinance Fund	USD/Class P EUR/Class P EUR/Class I	SICAV – Part II	May-06 (Jul-09) Apr-06 Sep-07	91 857 031 EUR	Based on fund's prospectus a maximum of 75% of the fund's net assets can be invested in microfinance assets		27-Sep-10	n/a 1 000 EUR 125 000 EUR	on 10th & 25th of each month
Dexia Micro-Credit Fund/BlueOrchard Debt Sub-Fund	EUR USD	SICAV – Part II	Apr-03 Sep-98	515 514 918 USD	424 943 704 USD	82.4	6-Oct-10	10 000 EUR 10 000 USD	on first Wednesday of each month
Edmond de Rothschild-Saint--Honore Microfinance	EUR	SICAV – Part II	Nov-05	6 490 000 EUR	n/a	63.1	1-Apr-10	n/a	on the first Thursday of each month
BBVA Codespa Microfinanzas	EUR	Open-end investment fund	Oct-06	28 000 000 EUR	19 700 000 EUR	70.4	1-Sep-10	50 000 EUR	on the first working day each month
Wallberg Global Microfinance Fund	EUR/Class I EUR/Class P	FCP – Part II	Oct-08	40 400 000 EUR	32 000 000 EUR	79.2	30-Sep-10	1 000 EUR	monthly
Dutch Microfund	EUR	Open-end investment fund	May-08	n/a	n/a	n/a		1 000 EUR	on the 10th business day each month
Erste-Sparinvest Espa Vinis Microfinance	EUR	Open-end investment fund	Jan-10	24 852 097 EUR	n/a	100; based on fund's prospectus	30-Sep-10	n/a	monthly
Triodos Microfinance Fund	EUR/Class I-cap EUR/Class B-cap EUR/Class B-dis EUR/Class I-dis EUR/Class R-cap	SICAV – Part II	Apr-09 Jun-09 Jun-09 Feb-09 Jul-09	52 400 000 EUR	41 300 000 EUR	78.8	30-Jun-10	250 000 EUR n/a n/a 250 000 EUR n/a	on last business day of each month
EMF Microfinance Fund AGmvK	USD/Class A USD/Class T	Open-end investment fund	Nov-09	n/a	n/a	n/a		an equivalent of CHF 250,000 in USD	monthly

T a b l e 2 (continued)		**Instruments**				**Geographical Distribution**							
MIV	**Currency/Class**	Loans and debt securities	Equity	Liquidity and others	as of (date)	Central and South America and the Caribbean	Eastern Europe and Central Asia	South and East Asia	Middle East and North Africa	Sub-Saharan Africa	Western Europe and USA	Funds not disbursed	as of (date)
responsAbility Global Microfinance Fund	EUR USD	67	6	27	30-Sep-10	42.8	38.6	16.2	0.6	1.8			30-Sep-10
responsAbility Mikrofinanz Fund	EUR	82		18	30-Sep-10	41.0	42.2	14.4	0.7	1.7			30-Sep-10
responsAbility Micro--finance Leaders Fund	USD	58	24	18	30-Sep-10	32.4	51.1	14.7		1.8			30-Sep-10
Dual Return/Vision Microfinance Fund	USD/Class P EUR/Class P EUR/Class I	Based on fund's prospectus 100 of funds is invested in debt securities				55.0	33.0	10.0		2.0			27-Sep-10
Dexia Micro-Credit Fund/BlueOrchard Debt Sub-Fund	EUR USD	82		18	6-Oct-10	22.0	31.0	18.0	1.0	4.0	6.0	18.0	6-Oct-10
Edmond de Rothschild -Saint-Honore Microfinance	EUR	63		37	1-Apr-10	38.0	27.7	34.3					1-Apr-10
BBVA Codespa Microfinanzas	EUR	28		72	31-Mar-10	100.0							1-Sep-10
Wallberg Global Microfinance Fund	EUR/Class I EUR/Class P	85		15	30-Jun-10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Dutch Microfund	EUR	Based on fund's prospectus about 50 of funds goes in equity in-vestment and 50 in debt securities				16.0	38.0	34.0	2.0	10.0			Jan-10
Erste-Sparinvest Espa Vinis Microfinance	EUR	Based on fund's prospectus up to 10 of funds can go in equity investment				n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Triodos Microfinance Fund	EUR/Class I-cap EUR/Class B-cap EUR/Class B-dis EUR/Class I-dis EUR/Class R-cap	58	21	21	30-Jun-10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
EMF Microfinance Fund AGmvK	USD/Class A USD/Class T	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Source: MIVs' websites and monthly or annual reports.

Table 2 lists all microfinance investment funds that are in our sample. It provides an overview of fund's inception date, its currency and legal status, share of instrument type in a fund's portfolio, total assets under management as well as total volume of fund's assets allocated solely to microfinance. Legal structures of MIVs in the studied sample include the open-end collective investment scheme SICAV – part II (West European parallel to open-end mutual funds common mainly in the U.S.) and Fonds Commun de Placement (FCP – part II).[8] Both forms are investment funds that offer redemption rights at any time during the course of investment. These forms of collective investment funds are common especially in European countries as France, Belgium, Luxembourg, Lichtenstein and Switzerland (Svárovská, 2009).

3.1. Key Performance Statistics

The descriptive evidence is based on key performance statistics of studied microfinance funds from January 2006 to September 2010. We include in the analysis volatility (standard deviation) of monthly returns, minimum and maximum monthly returns, the percentage of months with negative returns and the total per annum returns (Table 3 and Table 4). Panels A and B report returns of EUR and USD funds respectively, panel C shows return statistics for relevant benchmark portfolios. Indicated variables are then averaged across all observations within a subgroup of funds (arithmetic average can be skewed by one or a few outliers, therefore, median is presented in addition to mean figures).

An overview of mean/median monthly yields of microfinance investment suggests comparable returns to those of the risk-free asset around 0.3% p.m. (although EUR funds were in average performing slightly worse than USD microfinance funds). Figures of mean/median monthly returns are, however, highly dependent on the chosen time span (this is well visible from Table 4 depicting highly varying p.a. returns). The volatility of monthly returns measured by standard deviations of returns is more important. Low standard deviations of MIVs compared to the benchmark indices stand out. The reason might be that the covered period of time was very volatile in terms of stock market returns and interest yields on fixed income instruments. Another aspect that may play role is only a monthly recalculation of funds' net asset values (which may absorb some of sudden major changes in values) in contrast to more vivid trading of stocks and bonds and daily changes in indices' values.

[8] SICAV (Société d'Investissement à Capital Variable) is an open-end investment vehicle with a variable capital equal to the net asset value of the fund. Fonds Commun de Placement (FCP) is an unincorporated co-ownership of assets managed by a management company. The offered products are of the same nature as those of SICAVs even though FCPs may have access to more specialized and thinner markets and manage some marginal types of assets.

T a b l e 3 – **Monthly Returns Analysis (in %)**

MIV	Currency/Class	Mean (Median) Monthly Return		Standard Deviation in Monthly Returns	Min Monthly Return	Max Monthly Return	Percentage of Months with Negative Returns
Panel A: EUR denominated MIVs							
responsAbility Global Microfinance Fund	EUR	0.31	[0.27]	0.38	–0.36	2.38	10.53
responsAbility Mikrofinanz Fund	EUR	0.07	[0.28]	0.87	–4.10	0.61	10.00
Dual Return – Vision Microfinance Fund	EUR / Class P	0.27	[0.28]	0.17	–0.19	0.66	5.66
Dual Return – Vision Microfinance Fund	EUR / Class I	0.37	[0.39]	0.17	–0.14	0.72	5.56
Dexia Micro-Credit Fund – BlueOrchard Debt Sub-Fund	EUR	0.31	[0.34]	0.21	–0.29	0.90	7.02
Edmond de Rothschild – Saint-Honore Microfinance	EUR	0.20	[0.16]	0.22	–0.12	0.80	17.54
BBVA Codespa Microfinanzas	EUR	0.20	[0.15]	0.91	–2.29	2.69	37.78
Wallberg Global Microfinance Fund	EUR / Class I	0.24	[0.22]	0.21	–0.13	0.65	8.70
Wallberg Global Microfinance Fund	EUR / Class P	0.08	[0.28]	1.02	–4.49	0.68	17.39
Dutch Microfund	EUR	0.40	[0.17]	1.55	–1.99	4.99	45.83
Erste-Sparinvest Espa Vinis Microfinance	EUR	0.09	[0.08]	0.44	–0.64	0.90	37.50
Triodos Microfinance Fund	EUR / Class I-cap	0.29	[0.18]	0.48	–0.54	1.31	23.53
Triodos Microfinance Fund	EUR / Class B-cap	0.25	[0.18]	0.51	–0.62	1.25	40.00
Triodos Microfinance Fund	EUR / Class B-dis	0.16	[0.06]	0.43	–0.59	1.26	40.00
Triodos Microfinance Fund	EUR / Class I-dis	0.15	[0.12]	0.46	–0.82	1.30	27.78
Triodos Microfinance Fund	EUR / Class R-cap	0.27	[0.20]	0.52	–0.59	1.25	35.71
Median for EUR MIVs		**0.24**	**[0.19]**	**0.45**	**–0.59**	**1.08**	**20.54**
Mean for EUR MIVs		**0.23**	**[0.21]**	**0.54**	**–1.12**	**1.40**	**23.16**
Panel B: USD denominated MIVs							
responsAbility Global Microfinance Fund	USD	0.38	[0.38]	0.40	–0.33	2.57	10.53
responsAbility Microfinance Leaders Fund	USD	0.38	[0.39]	0.44	–0.51	2.14	13.04
Dual Return – Vision Microfinance Fund	USD / Class P	0.23	[0.34]	1.64	–8.26	5.26	7.89
Dexia Micro-Credit Fund – BlueOrchard Debt Sub-Fund	USD	0.37	[0.40]	0.26	–0.19	1.11	7.02
EMF Microfinance Fund AGmvK	USD / Class A	0.11	[0.33]	0.89	–3.94	0.44	8.70
EMF Microfinance Fund AGmvK	USD / Class T	0.30	[0.33]	0.12	–0.11	0.44	4.35
Median for USD MIVs		**0.34**	**[0.36]**	**0.42**	**–0.42**	**1.63**	**8.30**
Mean for USD MIVs		**0.30**	**[0.36]**	**0.62**	**–2.22**	**1.99**	**8.59**
Panel C: Benchmark indices (incl. risk-free rate)							
MSCI World Index		0.05	[1.07]	5.62	–19.04	10.90	47.37
MSCI Emerging Markets Index		1.09	[0.96]	8.25	–27.50	16.66	40.35
Markit iBoxx EUR Liquid Corporates Bond Index		0.31	[0.30]	1.32	–4.78	3.66	38.60
J. P. Morgan Emerging Bond Index		0.79	[1.07]	2.97	–13.79	8.52	26.32
10Y German Government Bonds		0.30	[0.31]	0.05	0.18	0.38	not applicable
10Y U. S. Government Bonds		0.33	[0.32]	0.06	0.18	0.43	

Notes: All returns calculations of monthly returns are based on simple return formula as depicted by equation.
Source: Own calculations based on data from Bloomberg and Markit.

T a b l e 4 – **Total p.a. Returns of Microfinance Investment Funds and Benchmark Indices (in %)**

MIV	Currency/Class	Total Return p.a.					Total Return from 2006 (or inception)
		2006	2007	2008	2009	2010*	
Panel A: EUR denominated MIVs							
responsAbility Global Microfinance Fund	EUR	2.70	6.31	6.88	1.09	1.29	19.48
responsAbility Mikrofinanz Fund	EUR	n.a.	2.15	3.64	–2.01	–1.20	2.50
Dual Return – Vision Microfinance Fund	EUR / Class P	0.45	3.11	5.60	3.27	1.87	15.07
Dual Return – Vision Microfinance Fund	EUR / Class I	n.a.	1.17	6.30	3.94	2.34	14.39
Dexia Micro-Credit Fund – BlueOrchard Debt Sub-Fund	EUR	4.21	4.83	5.90	2.42	0.70	19.32
Edmond de Rothschild – Saint-Honore Microfinance	EUR	2.04	2.27	3.93	2.79	0.47	12.00
BBVA Codespa Microfinanzas	EUR	n.a.	2.24	6.65	–0.69	0.73	9.08
Wallberg Global Microfinance Fund	EUR / Class I	n.a.	n.a.	–0.12	3.95	1.83	5.73
Wallberg Global Microfinance Fund	EUR / Class P	n.a.	n.a.	–0.17	4.60	–2.66	1.64
Dutch Microfund	EUR	n.a.	n.a.	2.64	2.98	3.78	9.70
Erste-Sparinvest Espa Vinis Microfinance	EUR	n.a.	n.a.	n.a.	n.a.	0.75	0.75
Triodos Microfinance Fund	EUR / Class I-cap	n.a.	n.a.	n.a.	1.08	3.60	4.72
Triodos Microfinance Fund	EUR / Class B-cap	n.a.	n.a.	n.a.	0.32	3.14	3.47
Triodos Microfinance Fund	EUR / Class B-dis	n.a.	n.a.	n.a.	0.32	1.91	2.23
Triodos Microfinance Fund	EUR / Class I-dis	n.a.	n.a.	n.a.	1.20	1.42	2.64
Triodos Microfinance Fund	EUR / Class R-cap	n.a.	n.a.	n.a.	0.44	3.11	3.56
Median for EUR MIVs		**2.37**	**2.27**	**4.77**	**1.20**	**1.63**	**5.22**
Mean for EUR MIVs		**2.35**	**3.15**	**4.13**	**1.71**	**1.44**	**7.89**
Panel B: USD denominated MIVs							
responsAbility Global Microfinance Fund	USD	5.07	7.70	6.44	1.16	1.60	23.79
responsAbility Microfinance Leaders Fund	USD	0.34	6.03	7.51	1.74	2.46	19.23
Dual Return – Vision Microfinance Fund	USD / Class P	1.70	5.51	4.31	–2.94	n.a	8.63
Dexia Micro-Credit Fund – BlueOrchard Debt Sub-Fund	USD	6.90	5.89	5.64	2.25	0.81	23.27
EMF Microfinance Fund AGmvK	USD / Class A	n.a.	n.a.	0.03	4.37	–1.74	2.58
EMF Microfinance Fund AGmvK	USD / Class T	n.a.	n.a.	0.03	4.37	2.73	7.25
Median for USD MIVs		**3.38**	**5.96**	**4.98**	**2.00**	**1.60**	**13.93**
Mean for USD MIVs		**3.50**	**6.28**	**3.99**	**1.82**	**1.17**	**14.13**
Panel C: Benchmark indices							
MSCI World Index		17.95	7.09	–42.08	26.98	0.92	–6.25
MSCI Emerging Markets Index		29.18	36.48	–54.48	74.50	8.70	52.24
Markit iBoxx EUR Liquid Corporates Bond Index		0.40	–0.24	–3.99	16.02	6.55	18.88
J. P. Morgan Emerging Bond Index		10.48	6.45	–9.70	25.95	14.46	53.10

Notes: *Returns for 2010 are calculated for the time span from January 1, 2010 until September 30, 2010. All returns calculations of monthly and per annum returns are based on simple return formula as depicted by equation.
Source: Own calculations based on data from Bloomberg and Markit.

Most microfinance funds in EUR currency were launched within the study period and might have encountered negative returns during the initial months. This might partly stand behind the higher percentage of months with negative returns of funds in the EUR portfolio (compared to the USD portfolio of funds). In spite of that, the percentage of negative monthly returns (10 – 20%) is much lower for microfinance investments than for stock markets (47% and 40% for world and emerging stocks respectively) and bond investments (38% and 26% for European corporate bonds and emerging bonds respectively).

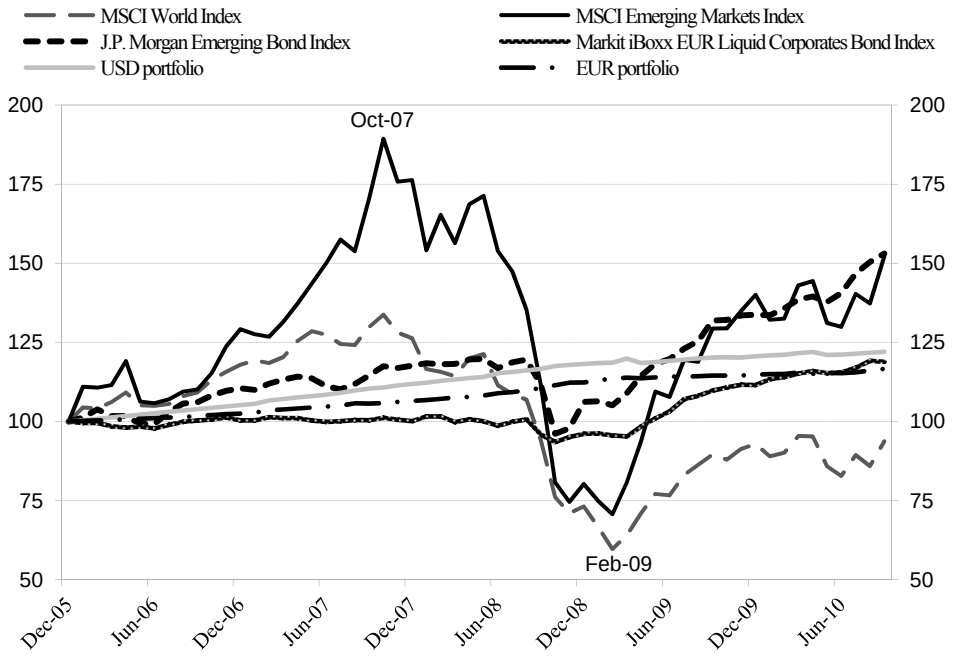
When examining the total per annum returns (Table 4) we may detect the delayed effect of the financial crisis on the performance of microfinance funds. For all benchmark indices the year 2008 was crucial and all ended in red numbers (fixed income indices lost up to 10% in value, while stock indices (MSCI World and MSCI EM) dropped by 42% and 54% respectively). In 2009, on the other hand, all benchmark markets experienced a significant correction (the emerging markets stock index grew by 74%). In case of microfinance investment funds we observe a growing tendency in year-on-year returns of until the end of 2008 with a subsequent slowdown in yearly yields in 2009 and part of 2010. For EUR denominated MIVs the year 2008 was in average the strongest within the study period. Although it was less good for USD funds (compared to previous year), both EUR and USD funds earned in average around 4 – 5% p.a. Significant decline in p.a. returns followed only in 2009.

Figure 2 reveals the evolution of the funds' net asset values and of index levels of all four benchmarks. In order to capture the evolution of representative microfinance funds we use equally-weighted portfolio of microfinance investment funds in the sample (hereinafter "EUR or USD microfinance portfolio"). Due to different length of MIV's monthly return series, the portfolio is rebalanced each time a new fund was introduced and/or some fund disappeared so that each fund's share in the microfinance portfolio is the same. In order to encompass as many microfinance funds as possible and to carry out an analysis of risk and return characteristics over the long-run (including times of stock exchange *bear and bull market*), we assume such reinvestment strategies (i.e. selling of shares in disappearing funds to buy remaining MIVs and selling of some shares of present-state funds to buy shares in newly launched microfinance funds).

All data in Figure 2 are rebased to 100 on the graph start date. For reasons of clarity only the evolution of equally-weighted EUR and USD portfolios of microfinance funds is shown, nevertheless a graphical analysis of individual funds separately would underline the main message of this figure – i.e. that microfinance investment funds have offered modest but in time stable returns compared to given benchmarks.

F i g u r e 2

Historical Performance of Microfinance Portfolio against Benchmark Indices



Source: Own calculations based on data from Bloomberg and Markit.

3.2. Correlation Analysis

Table 5 displays the correlation matrix of historical excess returns of equally--weighted EUR (in panel A) and USD (in panel B) microfinance portfolios over respective returns of risk free assets and excess returns of four selected market portfolios. Both microfinance portfolios have been negatively correlated with both stock and bond indices over the study period. An interesting point is that while USD portfolio's returns reported only slight negative correlation with MSCI stock indices (correlation coefficient of –0.14 and –0.17 with MSCI World and MSCI EM respectively), returns on microfinance portfolio denominated in EUR showed much stronger negative interdependence with a correlation coefficient reaching around –0.5. The lower correlation with respect to fixed income indices than with respect to stock markets (for Euro funds) is justified by the fact that MIVs invest to a greater extent in interest-bearing securities than in equity. Negative correlations to market benchmarks suggest an opportunity to balance investor's risk profile if microfinance assets are included in a portfolio.

Table 5

Correlation Matrix of Historical Excess Returns

Panel A: Excess returns over yield on 10Y German government bond						
		(1)	**(2)**	**(3)**	**(4)**	**(5)**
(1)	MSCI World Index	1.00				
(2)	MSCI Emerging Markets Index	0.92	1.00			
(3)	Markit iBoxx EUR Liquid Corporates Bond Index	0.50	0.47	1.00		
(4)	J.P. Morgan Emerging Bond Index	0.73	0.74	0.68	1.00	
(5)	EUR denominated MIV portfolio	–0.51	–0.49	–0.32	–0.38	1.00
Panel B: Excess returns over yield on 10Y U.S. government bond						
		(1)	**(2)**	**(3)**	**(4)**	**(5)**
(1)	MSCI World Index	1.00				
(2)	MSCI Emerging Markets Index	0.92	1.00			
(3)	Markit iBoxx EUR Liquid Corporates Bond Index	0.49	0.47	1.00		
(4)	J.P. Morgan Emerging Bond Index	0.73	0.74	0.68	1.00	
(5)	USD denominated MIV portfolio	–0.14	–0.17	–0.31	–0.20	1.00

Notes: Correlation coefficients are calculated on excess monthly returns (adjusted by return on respective risk--free assets) from January 1, 2010 until September 30, 2010. Monthly returns calculations are based on natural log return formula as depicted by equation 2.

Source: Own calculations based on data from Bloomberg and Markit.

4. Limitations of the Study

Previous research on the performance of microfinance has examined the profitability of microfinance institutions and its dependence on the performance of global financial markets or national economies. To our knowledge, all previous studies with exception of Janda and Svárovská (2010) treated directly the microfinance institutions and revealed that in average the profitability of MFIs is not correlated with the performance of global financial markets (Kraus and Walter, 2009 and Galema, Lesink and Spierdijk, 2011) but may be susceptible to the growth of domestic economies (Ahlin, Lin and Maio, 2011 and Kraus and Walter, 2009). The objective of our study is to examine the risk-return profile of specialized microfinance investment funds investing in debt or equity of microfinance institutions and acting as financial intermediaries between the final investor and MFIs. There are two advantages connected to our approach of evaluation of investment funds rather than MFIs. First is the availability of monthly data and the second is the focus on the actual investors' returns (in terms of the change in net asset values per share).

On the other hand, we identify several limitations of our results. First of all, microfinance funds are rather a recent phenomenon and before 2006 (i.e. the start of our examination period) there were only a few active commercial funds. For this reason we cannot examine longer historical time series to be able to capture the impact of the business cycle development.

Secondly, our chosen approach focuses on quite a different group of MFIs. While previous studies took into account financial indicators available for as much MFIs as possible from all over the world (MFIs reporting to MIX Market database), our analysis may have targeted at the end only the most successful and commercially viable MFIs. The reason behind is the selection process of funds' asset managers who seek to invest in suitable (i.e. successful and sustainable) MFIs, which might be concentrated only in certain world regions. Koivulehto (2007) and Galema, Lensink and Spierdijk (2011) examine MFIs' profitability from a regional point of view and find out that microfinance institution in Latin America and Eastern Europe and Central Asia are the most profitable (within their samples). Table 2 illustrates the regional breakdown of investment of studied funds that effectively concentrate the most on the two previously mentioned world regions. As a consequence, we may not conclude that our results would reflect the entire microfinance sector. Our results may be biased with respect to the group of most effective MFIs. On the other hand, this is not a limitation for the purpose of this study, which is to introduce microfinance investment funds as an investment alternative against pure stock and bond portfolio.

Conclusions

The objective of this study was to investigate the possibilities of development of resource side of microfinance business. This part of microfinance movement is the one which seems the most relevant for relatively affluent post-transitional European countries. We were particularly interested in describing the possibility of investing into MIVs. We paid special attention to risk and returns qualities of microfinance investment vehicles and the benefits of their inclusion into investment portfolio. We provided a description of the studied sample of microfinance funds and compared them with benchmark market indices. The major finding of the empirical part of the paper was that microfinance investment funds provide modest but in time stable returns compared to benchmark market indices. With respect to the relationship between the returns of microfinance funds and returns on stock and fixed income indices in developed and emerging economies, we found slightly negative correlation. Negative correlations of microfinance funds to market benchmarks suggest an opportunity to balance the risk profile an investor's portfolio by an inclusion of microfinance assets.

Although an investment in microfinance through structured microfinance investment vehicles may be beneficial for the portfolio diversification, such investment still brings along specific risk connected to the main characteristics of microfinance which is the provision of loans to entrepreneurs without collateral.

Microfinance institutions to which MIVs lend financial means may not be able to generate profit or to respond to their obligations on loans repayment if the repayment rates from their clients fall significantly down. The liquidity issue represents another source of specific risk as a given notice period needs to be respected when an investor decides to exercise its redemption right. Some funds, therefore, suggest that the investment in funds' shares should be viewed as a medium to long-term investment. Bearing in mind the still rather high specific risk of microfinance investment, an inclusion of microfinance assets intended to lower portfolio's overall market exposure is desirable when the current portfolio is already well diversified against the unsystematic risk.

We may conclude that given the supply-demand gap in the sector of small business loans in developing and transition economies, the prospective of future growth in the sector is realistic if necessary funding is available for expanding microfinance institutions. The investors in developed countries were historically instrumental in the development of microfinance, especially in the support of initial NGO-based microfinance backing. Now, there is an open opportunity to utilize the investing capacities of potential investors in the European transitional countries. Our study showed that microfinance assets may be perceived as a good risk diversification tool, which generates adequate risk-adjusted returns and may therefore be attractive to these investors.

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