

5 Scenario Process Microfinance

In this chapter the scenario process microfinance is outlined. This process was set up to analyse the methodology in general and the effects of microfinance in asset allocation specifically for this study. The author organised this scenario analysis with experts from scenario analysis, microfinance, asset allocation and emerging markets. The process was generously backed by the Asset Allocation and Research department of LGT Capital Management.

5.1 Setup

5.1.1 Defining the goal

Experts from various fields will elaborate developments for microfinance investments within the next 5-8 years using scenario methodologies. The objectives are a generation of potential scenarios and a determination of return, risk and correlation parameters in the respective states.

Microfinance is an emerging investment topic. A well-balanced asset allocation for investors of any kind may include any potential asset class, because besides return and risk, diversification effects and liquidity are also essential criteria. These parameters cannot be defined adequately with quantitative analysis of historic data for new investment topics or investment categories without a liquid secondary market, both conditions are true of microfinance. Hence, the quantitative tools generally used in finance do not enable the generation of a sophisticated asset allocation. Therefore a qualitative approach using scenario methodologies reveals additional and more adequate information.

In modern portfolio theory, the expected return and risk of an investment are considered as prevailing. Additionally, the current financial crisis demonstrated the importance of liquidity. In general, asset managers take those parameters into consideration to define their asset allocation. Hence, the analysis of risk, return and in the broader sense liquidity is relevant. In detail, normally economic scenarios are developed using growth and inflation as key parameters and expected return, risk

and in some cases liquidity in each scenario are modeled by a quantitative analysis of historic data.¹³⁵

The allowance of microcredits to entrepreneurs increased significantly over the last few years. Institutional and private investors are able to participate in this trend with vehicles investing in equity or providing loans to MFIs. During the last years, microfinance became an investment topic with steady excess returns¹³⁶, but a certain illiquidity of investments. Thus, microfinance is a potential asset class for balanced portfolios. However, the empirical knowledge of investors is limited, quantitative data are missing and hence a quantitative analysis is misleading.

For this research, a comprehensive scenario process led by scenario specialists of the Daimler Society & Technology Research Group (Daimler STRG)¹³⁷ takes place. Asset allocation and investment specialists from LGT Capital Management (LGT CM)¹³⁸ as well as microfinance experts met for three workshops to develop and analyse scenarios for microfinance. The objective is the elaboration of expected risk, return, and correlation parameters that enable an integration of microfinance in an asset allocation framework.

5.1.2 Methodology

The future framework conditions and the potential of microfinance investments in emerging markets for the next 5-8 years are investigated with scenario thinking. The evaluation of development paths, potential market size and regional differences are subordinated objectives in the process of modelling microfinance scenarios. Furthermore, a derivation of asset allocation parameters such as return, risk and correlation measures in the acquired scenarios will conclude the scenario process.

The methodology of the scenario process must allow a smart integration of the results into an asset allocation framework. Therefore, the characteristics of asset

¹³⁵ In general, past periods with similar characteristics are defined and the average value is taken as a proxy for the expected value.

¹³⁶ Excess returns are returns higher than the corresponding money market returns.

¹³⁷ The Daimler STRG is a think tank within Daimler Group. Prof. Minx is heading a team of 40 researchers of various fields. The research group has gained experience with several scenario analysis tools for many years. Besides projects across the group the team oversees external projects on a sporadic basis. Furthermore, Prof. Minx teaches at FU Berlin, TU Berlin and FHTW Berlin.

¹³⁸ LGT Capital Management provides traditional asset management services for LGT Group and external partners.

allocation processes have to be considered. In this process, the asset allocation framework is rather unrestricted due to the optimization of the weighted average of the scenarios. A different approach would be optimising different regimes and in a second step find the optimal asset allocation according to the regime weighting (see Figure 3-10).¹³⁹ However, in this case limitations for the scenario matrix would apply as the regimes must be the same for every asset class. As a result, the asset allocation framework chosen allows more variance and asset class specific scenario thinking. Accordingly, a scenario approach with many degrees of freedom is implemented. Consequently, a broad range of descriptors is possible and a 2x2 scenario matrix can be identified with an uncertainty-impact matrix. Moreover, the integration of a wild card scenario is feasible. Finally, an asset class specific scenario framework evolves and a wide discrepancy in the scenario world is created.

A focus of this scenario process is the derivation of quantitative figures from the scenarios. This step is crucial as it is the link between scenario thinking and the asset allocation framework. Firstly, the figures required for the asset allocation framework need to be defined. Secondly, a structured process and thought-out tools have to be developed. Thirdly, according to the developed scenarios an adoption of the tools is required. In this case, group thinking processes and questionnaires are developed to identify expected risk, return and correlation parameters for microfinance investments.

The definition of indicators and signposts is the final step of the process. The implementation of a monitoring process results from these parameters. As a result, the probability of the scenarios can be changed or if necessary new scenarios or even a new scenario process can be set up.

5.1.3 Setup of process

A scenario process requires a detailed structure and procedure. In a first step, a definition of the objective and the applied scenario methodology takes place. Furthermore, the time frame for the process is defined roughly. Subsequently, the participants are advisedly selected. According to objective, methodology, time

¹³⁹ For a more detailed insight refer to chapter 3.5.

frame, budget and participants' know-how, a schedule for the scenario process is formulated. A rough schedule of this process is depicted in Figure 5-1.



Figure 5-1: Schedule of scenario process microfinance

The objective and methodology of this scenario process were defined by the author and scenario experts from Daimler AG. Budget and time constraints were agreed on with the financial and most prominent intellectual capacity sponsor LGT Capital Management. The participants represent three different, however sometimes overlapping, backgrounds: asset allocation, microfinance and emerging markets. As a result, the coordination team including Dr. Frank Ruff, Dr. Burkhard Järisch (both Daimler AG) and the author decided on the following structure: firstly, an introduction evening with several presentations on microfinance, secondly, two two-day workshops for the scenario process and thirdly, a one-day finalization day with the key participants. Consequently, this comprehensive structure requires a lot of additional work in between the workshops, but also allows integrating very prominent experts, whose time budget is limited.

An introduction evening for non-microfinance experts was set up as a first meeting. The goal was creating a common know-how basis as most of the emerging markets or asset allocation experts were not familiar with profound microfinance knowledge. Furthermore, a first get-together started the group-building process already before the first workshop.

The scenario process was split in two workshops of two days each. The coordination group arranged a scenario thinking methodology that fitted the strict schedule. As a result, some research and a substantial description process had to be separated from the workshops and were delivered by the author and one participant. However, this also allowed the various experts and senior people to focus on key questions and the displeasure of written formulation of discussed details was kept on a low level.

Finally, a closing day with the key participants was organized to present the results of the process and discuss implementation details. Furthermore, this day also provided the platform for process feedback and discussing further scenario project ideas.

5.1.4 Team selection and participants

The team selection is a crucial procedure for the success of a scenario process. Firstly, experts for the given problem set as well as some people with a broad general education are demanded. Secondly, the emotional intelligence and group thinking are further essential selection criteria. As a result, the author put a lot of time and persuasiveness into selection and winning of participants. Additionally, the participation of some key persons to foster a potential later microfinance investment of LGT CM was considered in the team selection process. However, mentioning that neither participants nor moderators got a financial compensation for their efforts is important.¹⁴⁰ Consequently, the participation was intrinsic and not financially motivated. The only compensation was gaining new experiences, know-how and contacts in the fields of microfinance, asset allocation and scenario analysis.

First of all, the process requires scenario expertise and moderation capacity. A first time solo effort is condemned to fail. Hence, the author decided to consult scenario experts. Daimler AG has a think tank unit (society and technology research group – STRG)¹⁴¹, which implements scenario thinking for internal and sometimes external projects. In December 2008, a first meeting with the head of the unit Prof. Dr. Eckard Minx¹⁴², Dr. Frank Ruff and Dr. Burkhard Järisch took place. Finally, it was decided that Daimler STRG would moderate the process and take the lead in providing scenario methodologies into this process. Dr. Ruff and Dr. Järisch, two

¹⁴⁰ The asset allocation & research department of LGT Capital Management generously financed all costs of the scenario process, which were mainly travelling expenses and seminar costs,

¹⁴¹ The think tank unit STRG is one of the most prominent think tanks in Germany. About 50 highly qualified and specialised experts from various academic and scientific fields provide research for Daimler AG and also contribute in external research commissions.

¹⁴² Prof. Dr. Eckard Minx is one of the leading innovation experts in Europe. From 1992 to his retirement in 2009 he was the head of the Daimler STRG unit.

experienced scenario process experts, joined the scenario process coordination team with the author.

The next step is the selection of experts in the field of the problem set. In this case, it includes microfinance, asset allocation and emerging markets. Ideally, a scenario process consists of about 12 participants. Accordingly, the objective was to put a team of at least three experts for each field and three generalists together. The key selection criteria for the specialist in each field included expertise, openness for innovative approaches, capacity for team work, social competence and of course availability. The selection process determines the knowledge composition of the process team. Consequently, the team selection provides the basis for the scenario process (see Figure 5-2).

Scenario experts	Dr. Frank Ruff Dr. Burkhard Järisch Philipp Becker		
Microfinance experts	Asset allocation experts	Emerging markets experts	Generalists
<ul style="list-style-type: none"> ▪ Damian von Stauffenberg ▪ Patrik Huber ▪ Dr. Annette Krauss 	<ul style="list-style-type: none"> ▪ Walter Pfaff ▪ Dr. Magnus Pirovino ▪ Dr. Matthias Feiler 	<ul style="list-style-type: none"> ▪ Mark Rall ▪ Michael Simmeth ▪ Oliver Karius ▪ Wolfgang Hafenmayer 	<ul style="list-style-type: none"> ▪ Hanspeter Oehri ▪ Dr. Marie Mikl ▪ Johannes Oehri
External experts	Berg de Bleecker Ivo Knöpfel Rochus Mammertz		

Figure 5-2: Team of scenario process microfinance

Microfinance

Microfinance is a wide subject and, consequently the selected participants have preferably different backgrounds. At a microfinance conference in October 2008 in London, the author got to know Damian von Stauffenberg. Von Stauffenberg

founded MicroRate¹⁴³, the first rating agency for microfinance institutions in 1997 and has served as its CEO until 2009. MicroRate was designed to provide transparency and in that way attract commercial funding sources to microfinance. Prior to starting MicroRate, von Stauffenberg worked with the World Bank and its private sector affiliate, the International Finance Corporation (IFC) for 25 years. Von Stauffenberg is widely referred to as a pioneer of the microfinance industry and continues to develop new ideas for promoting its growth. His expertise is widely known and in demand, for example in February 2010 he appeared in front of the US Congress to speak about the state of microfinance. In January 2009, von Stauffenberg was convinced to join the process in Switzerland, although he is based in New York.

Other major players in the microfinance industry besides rating agencies include microfinance investment vehicles, development financing institutions, MFIs, microfinance investors and academia. For the process, the perspectives of MIVs, investors and academia were still missing. MFIs were not prioritised as on the one hand, they have a very local perspective and on the other hand, almost all microfinance experts have very detailed know-how about MFIs. The same applies for DFIs, for example Damian has worked over 25 years for the IFC.

As a MIV representative Patrik Huber joined the scenario process. Huber is member of the board of responsAbility social investments AG¹⁴⁴, one of the major microfinance fund providers. He has been with the company since responsAbility's launch and played a key role in developing various investment products, the company's investment processes, and related systems. Prior to this, he worked on various private banking projects at Credit Suisse.

Dr. Annette Krauss completed the microfinance competence. Krauss is the head of the Centre for Microfinance at the University of Zurich. Besides academic research and teaching, the centre seeks a practical focus. Before this, Krauss worked

¹⁴³ Microrate is one of the two major global rating agencies focusing on microfinance.

¹⁴⁴ responsAbility is backed by well-established Swiss financial institutions and a social venture capital company as founders and shareholders. It has a focus on microfinance investments and is one of the major microfinance investment managers.

as a training manager of the United Nations Capital Development Fund and was a senior lecturer of the Kellogg School of Management.

Furthermore, several experts of the microfinance industry were won to give input to the process as external experts. Interviews were organised with Berg de Bleecker, PGGM¹⁴⁵ Investment Manager Responsible Equities Strategies, Ivo Knöpfel, CEO OnValues¹⁴⁶ and Rochus Mammertz, Head of Equity Investment responsAbility Social Investments AG (industry leading regulation expert).

Asset Allocation

The asset allocation expertise in this process was represented by LGT Capital Management staff. Walter Pfaff is Head of Asset Allocation and Research and Dr. Magnus Pirovino former CEO of LGT CM and current Senior Investment Advisor bringing both very senior and thoughtful asset allocation know-how into the process. Furthermore, Dr. Matthias Feiler, a quantitative analyst at LGT CM, contributes with the know-how of latest academic research.

Emerging Markets

Several experts with in-depth emerging market know-how also participated. On the one hand, two fund managers from LGT CM Mark Rall, Head of Investment Management Fixed Income, and Michael Simmeth, Head of Multi Manager Products, both managing emerging market debt funds added their expertise. On the other hand, two start-up, small enterprise and venture specialists with emerging market focus joined the process. Oliver Karius and Wolfgang Hafenmayer both leading the LGT Venture Philanthropy¹⁴⁷ contributed with crucial emerging market small enterprise insights.

Further expertise

Hanspeter Oehri, a senior portfolio manager at LGT CM and advisor to the board added more than 30 years of investment and financial market expertise. In the fi-

¹⁴⁵ PGGM is a Dutch pension fund. It is one of the biggest institutional microfinance investors globally.

¹⁴⁶ OnValues is an investment advisor based in Zurich. Besides mainstream investments, OnValues focuses on investment solutions including social returns.

¹⁴⁷ LGT Venture Philanthropy provides solutions for philanthropic engagement. The objective is to raise the quality of life sustainably for the less advantaged people in developing countries.

nance industry his well-performing funds are known for the behavioural finance investment concept.

Dr. Marie Mikl and Johannes Oehri completed the team. Mikl has a background in biology and broadened the teams' horizon. She is a project manager for LGT&Science, an initiative that fosters collaborations with universities. Oehri added fresh ideas and talent capacity as he finished his University of St.Gallen diploma in 2008. He is currently working as a Financial Economist for LGT CM.

5.2 The process

The scenario process passed through seven steps as outlined above. Each step was taken during the workshops with the participants.

5.2.1 Preparations

5.2.1.1 Field of study

The problem set of the scenario analysis was determined by the scenario and coordination team. In various discussions, the scenario experts and the author defined the topic addressing the problem set in a way adapted to scenario analysis. The scenario process answers the problem set of "*Future framework conditions and potential of microfinance in emerging and developing market 2015+*". This includes a time horizon, a broad regional definition and a structured analysis of the issue.

The problem set was also introduced to all participants of the scenario analysis. Firstly, in the invitation for the process and secondly, it was outlined and discussed at the beginning of workshop I. This discussion appeared relevant to get a common understanding of the issue. In this case, the regional definition was challenged, but finally agreed on in consensus.

5.2.1.2 Introduction evening

The first group meeting was a microfinance introduction evening. The meeting took place on May 25, 2009 in LGT facilities in Pfäffikon/SZ. The group's know-how regarding microfinance was very diverse. Besides the microfinance and some emerging markets experts, the knowledge of microfinance was rather basic. Therefore, Dr. Annette Krauss and the author gave two presentations of one hour each followed by an intensive interactive discussion. The first presentation focused on

the financial side of microfinance giving an overview, introducing the market players and microfinance investment vehicles as well as discussing current risks for microfinance investments. This was followed by a talk “Opening the black box: how microfinance institutions work” focussing on the direct impact of microfinance for MFIs and clients. As a result, the evening gave a detailed insight into microfinance and the participants got to know each other. Thus, in the following weeks the participants followed microfinance market news closely via newsletters¹⁴⁸. Furthermore, a get-together after presentations and a one hour question and answer session promoted further discussions on microfinance as well as it enabled a first group-forming process.

5.2.2 Workshop I

The first scenario analysis microfinance workshop took place in Schloss Freudenfels, Switzerland on June 4-5, 2009. Schloss Freudenfels is a small convention centre for up to 25 persons in a secluded area close to Stein am Rhein. Thus, it allows focusing on a specific topic and supports team building as distraction is rare.

The workshops started with team building and process introduction. The team building and integration of scenario and microfinance experts who could not join the introduction evening was a key element. Furthermore, the coordination team introduced the scenario methodology and the problem set, both of which were discussed intensively. Consequently, a generally accepted basis was set and agreed on by all participants.

5.2.2.1 Impact factors

Following the determination of the problem, the participants divided into groups of four to brainstorm impact factors for “*Future framework conditions and potential of microfinance in emerging and developing market 2015+*”. In a plenary session, the gathered impact factors were presented and similar factors were revised. However, in this step it is not a must to withdraw highly correlated or unimportant parameters. The uncertainty-impact matrix will anyhow reveal those issues. Anyway, elimina-

¹⁴⁸ All major microfinance players offer weekly or monthly newsletters.

tions at this stage of the process economise the capacities. Finally, 29 factors resulted from this brainstorming session (Figure 5-3).

No	Descriptor	No	Descriptor
1	Liberalisation of capital markets	16	Securitisation of credit risks
2	Protectionism	17	Quality of due diligence on single credits
3	Volatility of EM FX	18	Development of microcredit market
4	Regulation of financial service providers	19	Development aid policy - consideration of MF
5	Measurability of social return of microcredits	20	Perception of MF investment track record
6	Reputation of microcredits in EM	21	Intensity of competition in MIV market
7	Cultural acceptance of financial services in EM	22	Commercial interest of MIV investors
8	Professionalism of MFIs	23	Systemic leverage in microfinance
9	Demand of microcredits in EM	24	Governmental incentives for investors
10	EM growth	25	Transparency of MIVs (and their investments)
11	EM inflation	26	Generation of a secondary market for MF
12	Market structure in MFI segment	27	Volume of international capital in EM
13	Risk-adjusted return of microcredit investment	28	Know-how of financial markets about MF
14	Hedging instruments for not credit specific risk	29	EM capital flows
15	Governmental regulation of MFIs		

Figure 5-3: Descriptors in scenario process microfinance

5.2.2.2 Factor projections

Thereafter, the descriptors were discussed and projections for these factors resolved. In three subgroups, the participants focused in detailed discussion on selected descriptors. At least one expert for microfinance, asset allocation and emerging market joined each subgroup. The factors were described in more detail, including the current state and indicators for changes. Moreover, these working groups outlined potential future states of the factors. The path and reasoning of these factor projections were described, but also concise titles resolved (see Figure 5-4). As a result, a detailed description of all 29 descriptors including definition, indicators, status quo and up to three projections was developed.¹⁴⁹

¹⁴⁹ An exemplary factor description is shown in Appendix– 1.

No	Descriptor	Projection A	Projection B	Projection C
1	Liberalisation of capital markets	ongoing	changeless	deliberalisation
2	Protectionism	increasing	changeless	decreasing
3	Volatility of EM FX	increasing	changeless	decreasing
4	Regulation of financial service providers	increasing	changeless	decreasing
5	Measurability of social return of microcredits	measurable	hardly measurable	
6	Reputation of microcredits in EM	improving	changeless	deteriorating
7	Cultural acceptance of financial services in EM	increasing	changeless	decreasing
8	Professionalism of MFIs	increasing	changeless	decreasing
9	Demand of microcredits in EM	strongly increasing	moderately increasing	changeless
10	EM growth	high	normal	low
11	EM inflation	high	normal	low
12	Market structure in MFI segment	strong consolidation	moderate consolidation	fragmentation
13	Risk-adjusted return of microcredit investment	outperformance	normal	underperformance
14	Hedging instruments for not credit specific risk	existing	not existing	
15	Governmental regulation of MFIs	increasing	changeless	decreasing
16	Securitisation of credit risks	excessively	changeless	not existent
17	Quality of due diligence on single credits	improving	changeless	deteriorating
18	Development of microcredit market	strongly	moderately	changeless
19	Development aid policy - consideration of MF	increasing	changeless	decreasing
20	Perception of MF investment track record	improving	changeless	deteriorating
21	Intensity of competition in MIV market	increasing	changeless	decreasing
22	Commercial interest of MIV investors	increasing	changeless	decreasing
23	Systemic leverage in microfinance	strongly increasing	moderately increasing	changeless
24	Governmental incentives for investors	increasing	changeless	decreasing
25	Transparency of MIVs (and their investments)	strongly improving	moderately improving	changeless
26	Generation of a secondary market for MF	existing and liquid	existing and illiquid	not existing
27	Volume of international capital in EM	strongly increasing	moderately increasing	changeless
28	Know-how of financial markets about MF	increasing	changeless	
29	EM capital flows	strongly increasing	moderately increasing	decreasing

Figure 5-4: Factor projections of descriptors

5.2.2.3 Classification of descriptors

An uncertainty-impact matrix was used as a tool for step four of this scenario analysis. The descriptors were evaluated regarding their impact on microfinance framework conditions and their probability. First of all, the participants discussed this task in groups of four and finally every single participant evaluated the impact and the probability of those 29 descriptors. However, every participant had 29 points for impact and 29 points for probability. These all had to be used evaluating the 29 descriptors by assigning 0, 1 or 2 points to each descriptor. Thereafter, the points were summed up and an uncertainty-impact-matrix applied (see Figure 5-5).

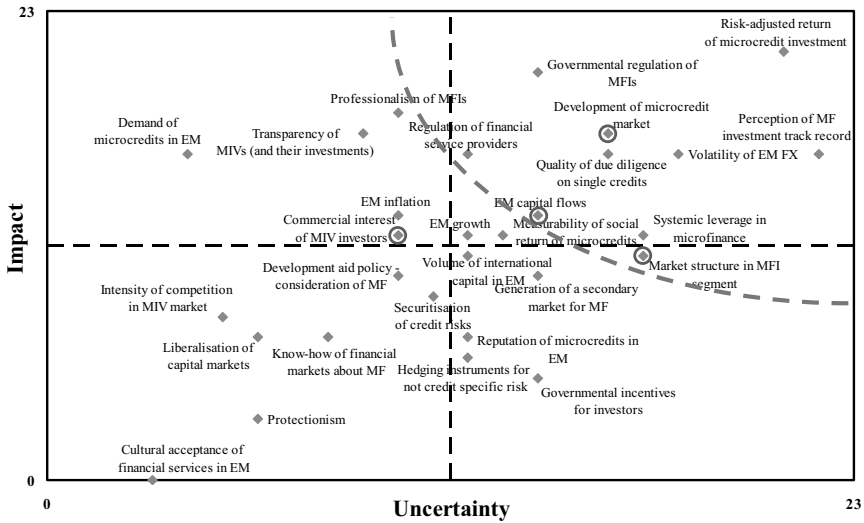


Figure 5-5: Uncertainty-impact matrix

In matrix 5-4, the top right hand corner is particularly important. In the area marked by the dotted line the descriptors have a relatively high impact and a high uncertainty regarding the scenario question. Hence, these descriptors are favourable to span a scenario cross. On the one hand, they open up a broad range of outcomes (projections). On the other hand, they also have a high impact. Two of these descriptors span a scenario cross with four possible scenarios. For example, if the projection of a descriptor is very uncertain, the projections are nearly equally weighted or at least any scenario field has a certain probability. If it is furthermore an important factor with high impact, it is a key driving force of the problem set. Consequently, two uncertain and important factors are preferred for the scenario matrix. The selection of these factors is outlined in the next section.

5.2.2.4 Scenarios

The scenario matrix exhibits the basic scenario features and is defined by two descriptors. In step five, the selection of descriptors from the uncertainty-impact matrix to span the scenario cross takes place. In this case, a 2x2 scenario matrix was applied to keep the amount of scenarios limited (see Figure 5-6). Preferably, these

two factors are from the top right hand corner of the uncertainty-impact matrix. However, the combination of those two must also be reasonable. Usually, the scenario matrix shall be conducted by more general factors. At best, impact and uncertainty are somewhat uniformly distributed. Moreover, a macroeconomic factor may help the participants to build a solid base, whereas a specific microfinance factor may give the typical framework.

In an intense discussion, participants outlined that various “uncertain-impact” factors are not eligible for a scenario matrix. Several factors appeared to be very specific in the microfinance segment or financial markets. This includes factors such as “quality of due diligence”, “volatility of EM FX”, “systemic leverage”, “risk-adjusted return of microfinance investments” and “perception of track record”. Of course, these factors can have a huge impact and are uncertain. However, most of them have an impact especially in negative cases such as “quality of due diligence”, “volatility of EM FX” and “systemic leverage”. In conclusion, some of these factors are more important for wild card scenarios than a scenario matrix. Moreover, the descriptor “risk-adjusted return of microfinance investments” and “perception of track record” are close to the goal of this scenario analysis. As a result, they should not be included in the scenario cross.

A scenario matrix was decided with “EM capital flows” and “development of microfinance market” as axes. Taking the previous discussion into account, the participants chose a macroeconomic and a microfinance specific factor. “EM capital flows” measure the flow of money in or out of the EM. “Development of microfinance” market describes the infrastructure provision and development of microfinance regarding regions and products. Both descriptors are in the uncertain-impact spectrum of the uncertainty-impact matrix. Accordingly, these two factors span a scenario matrix with four scenario fields. Next, the participants split into groups of three¹⁵⁰ to enrich the scenarios with projections of the other 27 remaining descriptors. Finally, this process created well-defined scenarios and suitable scenario titles were chosen (see Figure 5-6).

¹⁵⁰ Again, all subgroup teamwork processes had the intention of broad group expertise. Therefore all groups consisted of an expert for microfinance, asset allocation and emerging markets.

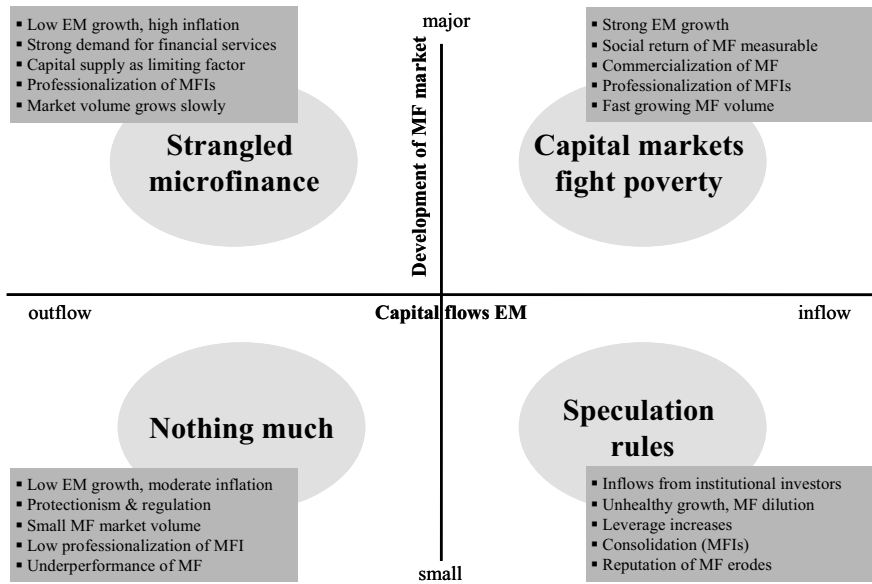


Figure 5-6: Scenario matrix “EM capital flows” and “development of MF market”

Furthermore, a second scenario matrix was selected. This enhances the variety of possible scenarios and increases incidents. Moreover, a wild card scenario was introduced to generate a “black swan” scenario (see Figure 5-7). For the second scenario matrix, the participants decided to choose two different factors. The above discussed exclusion of several factors with high impact and high uncertainty for the scenario matrix limited the number of potential scenario matrix factors. As a result, the participants decided to allow in one exceptional case also the inclusion of a factor even though it is not in the top right hand corner. As a result the last available factor of the top right hand corner “market structure in MFI segment” was chosen. Furthermore, the factor “commercial interest of MIV investors” was selected as axes in the second scenario matrix, because the microfinance market is currently at the turning point of pure social investors to also financial motivated investors. However, a scenario including a fragmented market structure and decreasing commercial interest of investors seemed very unlikely. Hence, it was decided to analyse

a wild card scenario instead of a scenario with decreasing commercial interest and a more fragmented market structure. Again, the participants split into groups of three¹⁵¹ to enrich the three remaining scenarios and formulate the wild card scenario.

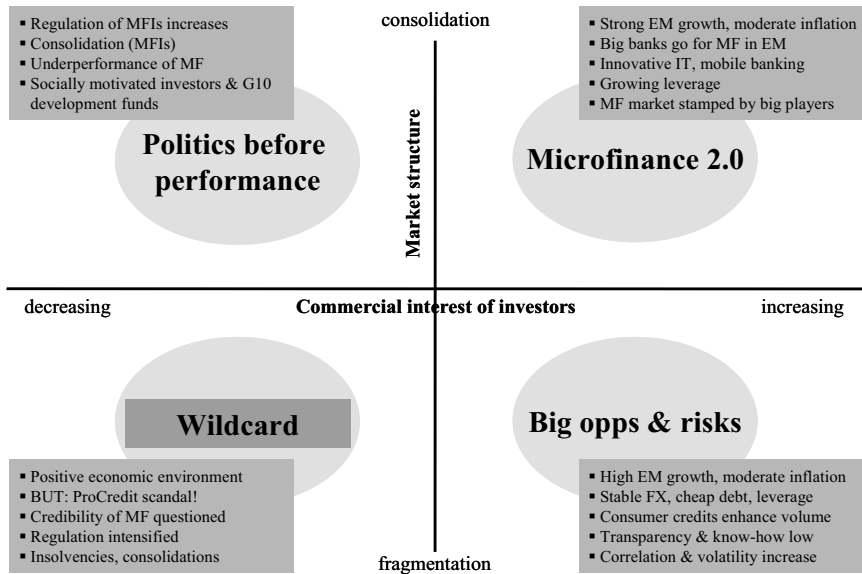


Figure 5-7: Scenario matrix “market structure” and “commercial interest”

The scenario process generated seven conclusive scenarios and one wild card scenario. However, the participants and scenario teams decided to reduce the number of scenarios for the further process for two reasons. Firstly, the focus allows a concentration of the capacities. Secondly, a selection can also reduce the overlap or similarity of scenarios. This aspect is essential in a scenario process and can be illustrated with the scenario funnel.

¹⁵¹ See footnote 150.

A comparative analysis of the scenarios unveiled the overlaps of scenarios. On the basis of this analysis, the goal was to reduce complexity and proceed with four scenarios and the wild card scenario. The participants stated that the scenario “microfinance 2.0” widely overlapped with the scenario “capital markets fight poverty”. It was decided to proceed with the latter scenario as it seemed more realistic. Furthermore, the participants agreed that a further fragmentation of the microfinance market structure was nearly impossible and hence the scenario “big opportunities & big risk” was excluded. Thirdly, the participants indicated that capital outflows from the emerging markets are very unlikely, especially if microfinance markets develop. Thus it should only be considered in one scenario. Hence, the scenario “strangled microfinance” was not considered in the further process. In conclusion, the participants decided to focus on the scenarios “capital market fight poverty”, “nothing much”, “speculation rules” and “politics before performance”. Finally, these scenarios were scripted and enriched with further details in between workshop I and workshop II. The following paragraphs provide a brief overview of these scenarios written from a backward-looking perspective in 2015.

Scenario description “capital markets fight poverty”

The macroeconomic conditions reveal a clear leadership of emerging markets after the financial crisis. The emerging markets took advantage of an ongoing liberalization trend, increased their influence in international committees and strengthened domestic markets. Thus, the prospering economies increased intra-EM trade and had growth rates of more than 7%. Furthermore, inflation rates remained on a moderate level of 6-11%. As a result, strong capital inflows into the emerging markets resulted and came along with slightly appreciating currencies.

In the years 2009-2015, microfinance has become a mature asset class. Investors considered a merely low correlated asset class with interesting fixed income return potential. Furthermore, the social return of microfinance attracted investors and in 2012 several companies offered a social return analyzer. Consequently, commercialization of microfinance investment increased. Furthermore, MIVs adapted a low leverage of about 10% instead of cash levels they had in previous years to meet investors’ return expectations. As a result, the number of MIVs increased and also a liquid secondary market for MFI debt obligation transactions emerged.

In the aftermath of the financial crisis, the authorities increasingly tightened the regulatory framework for MIVs and MFIs. However, the transparency for investors was not significantly increased. Nevertheless this was not a main concern for investors that wanted to participate in the booming market. Thus, first critics arose. For instance Thorsten Hens, Prof. for Behavioral Finance at the University of Zurich stated in the *Neue Zürcher Zeitung* (NZZ) in June 2013: “This investor’s behavior can be disastrous as we might know especially since the securitization of mortgage-backed securities some years ago”.

The competition in the microfinance business increased slightly, because inflows increased dramatically and sufficient funding for MFIs was in the market. Thus, also demand for microcredits grew tremendously and multiplied over the past six years. As of today (2015), the market serves 300 million clients and it has a volume of more than USD 250 billion. The funding of MFIs changed in this environment. Nowadays, more than 50% (in 2009 about 20%) of the volume is financed by foreign credits. Moreover, synergy effects led to some consolidations, which did not attract attention due to the strong market growth. Furthermore the MFIs enhanced the product segment and distribution channels to extend customer retention (“cross-selling”), but also to attract new clients. As a result, MFIs generated synergies and reduced operating costs. Thus, the return on equity increased sharply and made stakes in MFIs attractive.

In line with balance sheet growth, MFIs hired more employees. During the last years, the recruiting and training of employees was a core task for MFIs. However, many MFIs were trapped in the strong market growth and organization, while processes and structures of MFIs suffered. As a result, in various MFIs the credit quality is very questionable and it seems as if many consumer credits were in the credit portfolios. Thus, one might expect higher default rates. This and the huge impact on the regional economy have caught the attention of authorities and in some countries nationalizations have taken place last year.

Scenario description “nothing much“

The macroeconomic conditions in the emerging markets became gloomy. A short and sharp recovery after the financial crisis was only a short term effect. Later on, the developed countries stabilized but the emerging markets became very heteroge-

neous. Countries exporting to developed countries and also having an increasing domestic demand such as Brazil and China continued to grow, whereas several countries in Central and South America (e.g. Ecuador, Nicaragua, Venezuela) as well as Africa (e.g. Nigeria, Ghana) suffered severe depressions. Overall, the growth rate for emerging markets in the last five years was below 2% with China and Brazil being exceptions. However, at least the inflationary pressure was moderate with 6-11%. Furthermore, protectionism became an increasingly used instrument of international politics in accordance with increasing intervention of regulatory authorities in trade business. As a result, most countries noted capital outflows and depreciating currencies.

The worsening macroeconomic situation made debt obligations for MFIs unattractive. On the one hand, currency depreciation increased the pressure on MFIs with unhedged debt obligations and caused some defaults. On the other hand, the funding of microcredits had to become more local. The foreign funding shrunk from about 20% in 2009 to only 10% in 2015. As a result, the MFIs had to generate more deposits and also reduced the credit volume. Therefore, MFIs focused on their core business and did not extend the product segment widely. The increased funding costs and the remaining high operating costs did not allow profitable business models. Furthermore, the main challenges such as management quality, training of employees and risk management were not tackled. As a result, due diligence of micro-entrepreneurs was weak and default rates increased slightly. Thus, authorities increased their regulations but could not act efficiently. In most cases the bureaucracy for MIVs and MFIs increased with no major impact on risk management or control.

The reputation of microfinance shrunk and investors reallocated their money. However, the first years have been promising. In 2009 and 2010 investment in MIVs more than doubled. But return expectations were not met and the underperformance for example to emerging market sovereign debt did not convince financially motivated investors. Thus, socially motivated investors and the sovereign or quasi sovereign investors remained the pillar of microfinance. Some G10 countries decided to increase microfinance investments as a new form of development aid. In this market environment many service segments of the microfinance industry declined. International rating agencies for instance reduced their effort in

microfinance from 2012 onwards. The remaining three specialized rating agencies divided the market and have no major incentives anymore. As a result, the transparency for investors did not increase at all.

Scenario description “speculation rules“

The recovery of the world economy from the financial crisis was mainly driven by emerging markets. After a sharp rebound in the years 2009 and 2010, growth rates of emerging markets decreased in the following years. However, economic growth of about 5% with a moderate inflation of slightly above 6% was still far better than in developed countries. As a result, the emerging markets profited from capital inflows and thus the currency appreciated slightly.

The capital was also attracted by microfinance. Major institutional investors entered the market seeking attractive returns and a sustainable investment. However, the microfinance industry was not able to allocate the money accordingly. As a result, money flowed into countries and segments that could deal with the huge inflows. Thus, mature MFIs acting in urban areas attracted the money. Consequently, the social status of microfinance eroded and microcredits were increasingly consumer credits. Furthermore, MFIs were not fostered to enhance their product segment or increase their regional focus. At this stage, the MFIs driven by profit maximization increased the leverage and the credit lending policy loosened further. Neither credit assessments were improved nor were creditors in default suited. As a consequence, the default rates increased steadily and the balance sheet of MFIs was only backed by ongoing inflows. In this situation, a consolidation phase started. Major players took over smaller competitors mainly to increase their balance sheet and significance. Thus, the microfinance market more and more had a risk concentration.

MIVs benefited from major inflows. Their business model finally became very profitable, but the increased allocation of money was in line with lowering standards of due diligence. MIVs were just not able to deal with the increasing asset under management. Furthermore, in such an environment more transparency for investors was not required. In fact, MIVs put more effort in creating a secondary market to enhance the liquidity of their portfolios and have a market valuation for the debt obligations. Socially motivated investors became more and more dissatis-

fied and finally in 2014 some of them made a statement against the “misbehavior of financial markets in a social environment” and withdrew their money. However, the microfinance industry was not affected anymore by this minor investor group and the business went on. In 2015, the market reached a volume of about USD 200 billion outstanding credits funded primarily by international capital markets.

Scenario description “politics before performance”

The macroeconomic conditions do not have a major impact in this scenario. However, the financial crisis caused a shift in regulatory policies globally which had a major impact on microfinance. The increased operating costs of MFIs due to regulatory issues triggered a wave of consolidations. Major market players took advantage of the opportunity to increase their regional scale and acquired smaller niche MFIs. Synergy effects kicked-in only partially and several integrations failed due to the centralized management.

From an investors’ point of view, MIVs performed not as expected compared to other asset classes. Thus, financially motivated investors were not attracted or even exited the microfinance market. However, investors with a social motivation remained invested and even generated moderate inflows. A main reason for this was the introduction of a new methodology to measure social returns in 2011. This enabled investors to market their social investment accordingly. Moreover, governmental and supranational investors became able to prove the social responsibility of their microfinance investments. As a result, these institutions increased their exposure in microfinance. In addition, the development aid policy was more and more shifted to microfinance.

The shift of the investor structure decreased the competition among MIVs. Furthermore, MIVs focused increasingly on social returns. Consequently, the interest rate for debt obligations decreased. Moreover, the MIVs efforts for a secondary market resulted in the launch of such a platform in 2012. However, the liquidity is up to now very low. In general, MFIs still source only 25% of their funding from foreign investors. The main funding with finally about 75% are local deposits. The lowered refinancing costs were transferred into better credit conditions, but also used for investments in employee training, risk management and an extended product and regional range. As a consequence, microfinance increasingly gained

acceptance and reputation in the emerging markets. The population acknowledges the positive effects of microfinance and thus the payment morale increased steadily. In 2015, the PAR30 is below 1% and merely no write-offs have to be made.

5.2.2.5 Wild card scenario and incidents

In the sixth step of this scenario process the participants developed a wild card scenario. This wild card scenario practically goes hand in hand with the other scenarios. However, it is one of the clues of a scenario analysis to elaborate one or more wild card scenarios. This wild card scenario is triggered by an exogenous shock. This shock can have positive or negative effects on the problem set of the scenario analysis. Hence, first of all the subgroup creating the wild card scenario provided an open list of potential shocks to microfinance (see Figure 5-8). In this case, the participants decided to introduce the “microfinance Madoff” into the scenario process. Besides, the elaborated list of potential shocks for microfinance can be used for an ongoing risk assessment.

Event Risk	Impact
Global illiquidity	Market growth slowing – less allocation of loans, nonperforming loans become visible
Press: “exploiting the poor – rates >50%!”	Transparency and active communication may cushion – short term impact
Bad reputation – negative social impact studies	Social investors de-invest, focus on commercial investors possible
War – e.g. Armenia, Azerbaijan, Georgia	Major impact despite regional diversification
International banks entering the market	Strong competition
Human right on credits for 12%	Easy credits per law, very unlikely
MF organized cooperatively	Limitation of capital and growth
EM hyperinflation	Adaptation to inflation possible (due to short duration), but hyperinflation needs a different approach
Microfinance Madoff	Impact depends on market size

Figure 5-8: Potential exogenous shocks to microfinance

Wild card scenario description “microfinance Madoff”

The recovery of the world economy from the financial crisis was mainly driven by emerging markets. After a sharp rebound in the years 2009 and 2010, growth rates

maintained at a high level, whereas the developed countries were not able to find the path to sustained growth. The growth rates in the emerging markets were close to 10% with a moderate inflation of about 6%. Thus, the very attractive macroeconomic conditions attracted huge capital inflows resulting in moderately appreciating currencies.

The microfinance industry managed to take advantage of the good conditions and the volume increased steadily. Both social and financial return pleased the investors. Furthermore, MIVs were able to increase the quality of the due diligence. Accordingly also MFIs increased their standards for credit assessments, risk management and employee training. The reputation of jobs in microfinance increased tremendously and MFIs were able to attract educated people. As a result, MFIs' management became very professional and the product as well as regional range was extended. Microfinance investors also increased their know-how of the industry. On the one hand, major institutional investors gained experience. On the other hand, microfinance investment consultants became an industry standard. As a result, until 2013 the transparency of the market as well as the know-how and competence of all involved parties increased.

However, in April 2013 a major shock hit the microfinance industry. A major conglomerate of 50 MFIs with a consolidated balance sheet of USD 20 billion went bankrupt due to mismanagement and accounting fraud. The microfinance investors were worried and many withdrew their capital immediately. MIVs did not have sufficient liquidity and most of them had to close their funds causing a shock wave among investors. Even more dramatic scenes became obvious in the emerging markets. The clients with deposits at MFIs panicked and started to withdraw their money. As a result, also many MFIs got into liquidity problems resulting in some countries in a bank run. Finally, the authorities in emerging markets reacted and decided that major MFIs had to take over the smaller ones. However, nowadays in 2015 the market still suffers as international capital markets lost confidence in microfinance investments. At least the reputation within the emerging markets was through the interventions of the government partially restored.

5.2.3 Workshop II

The second scenario analysis microfinance workshop took also place in Schloss Freudenfels, Switzerland on July 9-10, 2009.

5.2.3.1 Derivation of implications

The derivation of implications is the key process of any scenario analysis. This holds particularly true in this case, because return estimates and risk parameters of microfinance as well as correlations with other asset classes are the objective of this scenario process.

In the second workshop, the participants discussed implications of the developed scenarios. At first, the participants split in groups of three¹⁵² and debated on the impact as well as chances and risks of each scenario for the main players – debtors, MFIs, MIVs and investors. Thereof, implications for current positioning and actions were discussed. Subsequently, those results were compared between all scenarios including the wild card. In conclusion, the participants became acquainted with the scenarios after the four-week break between the workshops.

The derivation of return estimates played an essential role in the second workshop. Hence, the scenario implications for investors were analysed in two steps. Firstly, the qualitative implications in the microfinance market were assessed (referring to Figure 4-2). For example, in the scenario “nothing much” hedged interest rates for debt obligations are expected to decrease slightly due to higher FX hedging costs. Moreover, the default rate strongly increases. This is caused by a stagnating microfinance market and low economic growth resulting in a bad portfolio quality of MFIs. Microcredits default increasingly and often macroeconomic conditions force debtors to use credits partially for comestibles. Microcredits are extended with increased frequency leading to over-matured portfolios. Furthermore, MIVs have higher expenses for regulation, lobbying, marketing and of course tightened due diligence. This leads to higher operating costs of MIVs.

In a second step, the participants derived return estimates for microfinance equity and debt investments (referring to data of Figure 4-10). In the next paragraph a detailed description for the assumptions of microfinance debt returns is outlined.

In June 2009 investors of MIVs had an annualised return of about 6%. In the scenario “capital markets fight poverty”, the interest rate for debt obligations between MIVs and MFIs remain at about 9%. Moreover, the defaults of these are

¹⁵² See footnote 150.

expected to increase very slightly to 1%. Furthermore, MIVs are able to reduce their costs to about 1.5%. As a result, in the scenario “capital markets fight poverty” the participants expected a slight increase of returns to 6.5%. In the scenario “nothing much”, several factors deteriorate. Firstly, the interest payments of debt obligations are with roughly 8% about 1% lower due to higher FX hedging costs. Secondly, the default rate increases from 1% to about 4%. And finally, the total expense ratio increases by 1% to 3%. As a result, the participants estimated that the expected return in the scenario “nothing much” is about 1% instead of 6%. In the scenario “speculation rules” the interest rate for debt obligation lowers due to the competitive market to about 7.5%. However, due to the huge money inflows MIVs are able to cut their costs by 50% and charge only slightly more than 1% fees. As a result, in the scenario “speculation rules” the participants estimated the return to be about 5.5%. In the scenario “politics before performance” the participants expect a lower interest rate for debt obligation to MFIs. Driven by social motivated investors the interest lowers to 7%. The ongoing consolidation increases defaults to about 2%. The fees of MIVs are unchanged. As a result, in the scenario “politics before performance” the participants estimated an annual return of about 3%. This structured approach was also conducted in all scenarios for equity returns (see Figure 5-9).

	Capital markets fight poverty	Nothing much	Speculation rules	Politics before performance
Return expectation MF debt	6.5%	1%	5.5%	3%
Reasoning	Rates remain, slight increase of defaults, slight cost reduction	Rates decrease moderately, strong increase of defaults, operating cost increase	Rates decrease, defaults increase slightly, operating costs decrease	Rates decrease, defaults increase, operating costs remain
Return expectation MF equity	30%	-30% (either ~0% or ~-60%)	45%	24% (either ~-48% or ~-0%)
Reasoning	Increasing leverage, 10x market growth	MFI's diverge: increasing defaults & costs (regulation), leverage remains, depending on extent	High leverage, multiples increase from 2x to 4x book, 5x market growth	MFI's diverge: Regulation increases operating costs, some MFI's can generate scale effects to cushion

Figure 5-9: Return expectations for MF debt and equity in described scenarios

The derivation of a risk parameter for the scenarios is complicated. As mentioned in chapter 4.5, the analysis of volatility parameters is inappropriate. Thus, an analysis of the risks in the underlying structure might be a proxy. Hence, PAR30 and write-offs of MFIs might give an indication. These parameters were analyzed in the quantitative derivation of returns for the estimated defaults costs of MIVs. As a result, the expected defaults of debt obligations are a proxy for some components of risk in microfinance debt investments.

	Capital markets fight poverty	Nothing much	Speculation rules	Politics before performance
Provisions for defaults of debt obligations	0.5-1%	4%	1%	2%

Figure 5-10: Expected risk proxied by expected defaults of debt obligation

Additionally the risk-adjusted attractiveness of microfinance might be a proxy for risks. This measure was chosen, because individuals cannot define “risk” adequately. Nevertheless, the participants were able to rank the risk-adjusted

attractiveness of asset classes in each scenario. For this reason, the participants completed a questionnaire evaluating 10 asset classes including MF debt and equity in the four scenarios and the wild card scenario (see Appendix– 2). The analysis reveals that microfinance debt investments are attractive on a relative basis only in two of the five scenarios. In the remaining scenarios and the wild card, microfinance debt investments are expected to be relative unattractive on a risk-adjusted basis. Microfinance equity investments seem to be more attractive from a participant’s perspective (see Figure 5-11).

Relative attractiveness of asset classes in scenarios
(scale 1-6 with 6 being very attractive)

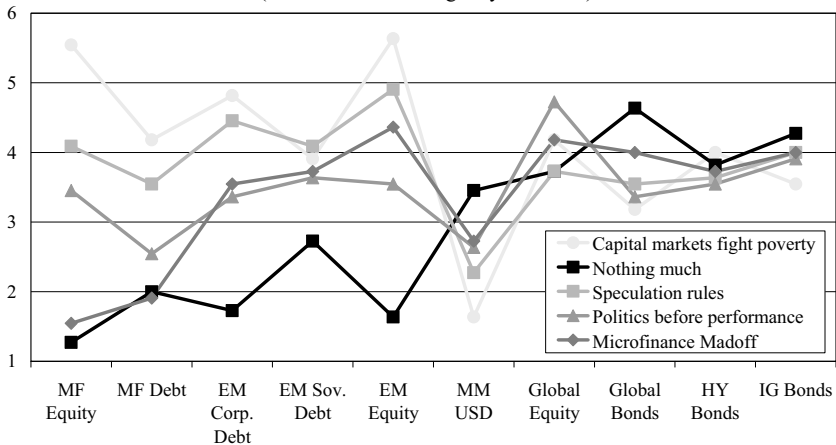


Figure 5-11: Relative attractiveness of asset classes in each scenario

The weighted average of all scenarios reveals the relative unattractiveness of microfinance (see Figure 5-12). The participants consider the risk-adjusted return of microfinance debt investments as underperformer. A money market investment is the only asset class that is expected to be less attractive. However, the risk-adjusted return does not include a diversification effect which has to be considered for asset allocation. In conclusion, microfinance offers valuable returns, but the participants

estimated the risk-adjusted attractiveness as underperforming compared with other asset classes.

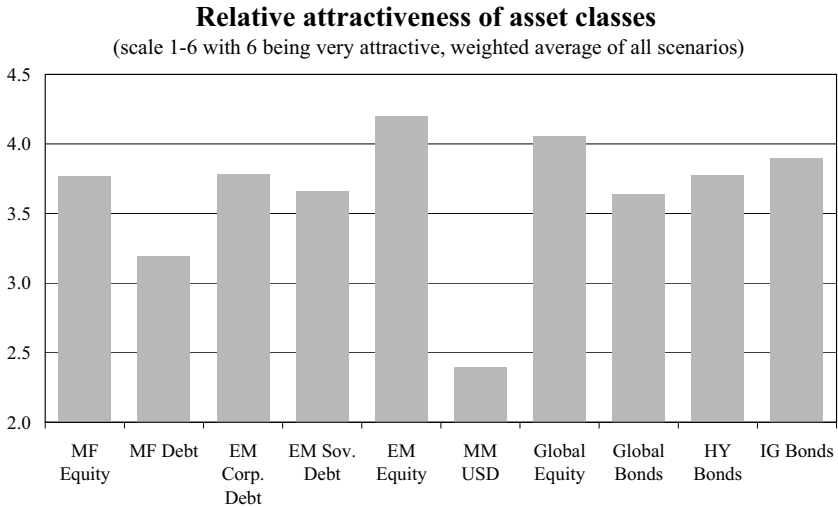


Figure 5-12: Relative attractiveness of asset classes overall

The derivation of correlation parameters is a complex intention. Up to now, many microfinance experts merchandise the story of microfinance as being uncorrelated to other asset classes. As market data are rare, in this study the correlation was derived by a questionnaire (see Appendix– 3). The participants were asked to evaluate the correlation of five asset classes (EM sovereign bonds, EM corporate bonds, EM equities, MF debt and MF equity) with 11 macroeconomic and market factors such as growth, inflation, public debt and commodity prices. Accordingly, the cross-correlation of microfinance and these asset classes via macroeconomic

factors indicates a proxy for correlation.¹⁵³ The evaluation of the questionnaire unveils a clear correlation of microfinance along with other asset classes. Indeed, it seems obvious that economic growth or high commodity and food prices affect all asset categories including microfinance. However, the correlations are not extensively high (see Figure 5-13). As a result, this study clearly rejects the assumption of microfinance being an uncorrelated asset class.

	EM corp. debt and MF debt	EM sov. debt and MF debt	EM equity and MF debt
Correlation	~-0.7	~-0.6	~-0.4

	EM corp. debt and MF equity	EM sov. debt and MF equity	EM equity and MF equity
Correlation	~-0.5	~-0.4	~-0.6

Figure 5-13: Correlation of microfinance with other EM asset classes

The final step in the process of deriving implications was the assessment of the probability of occurrence. Consequently, participants analysed the probability of occurrence of each scenario and as well the divergence of each scenario from the status quo (see Figure 5-14). This analysis contributes to various calculations such as weighted overall parameters. Furthermore, the measure variance from status quo

¹⁵³ In detail, the estimated correlation coefficients of all participants are summed for one factor. In a next step, a quotient of the summed estimated correlations with increasing EM growths of microfinance debt and for instance EM equities is calculated. The same is performed for all 11 factors. The quotient has to be in the interval from -1 to 1. Finally, the mean of the 11 quotients generates a correlation estimate for the two asset classes, in this example for microfinance debt and EM equity.

illustrates the impulse for change and hence creates awareness for change. Additionally, the participants estimated the coverage of these scenarios. On average, the participants expect that the four scenarios and the wild card come close to about 80% of future states. In conclusion, the process generated four nearly equally weighted scenarios that are assumed to cover about 80% potential futures.

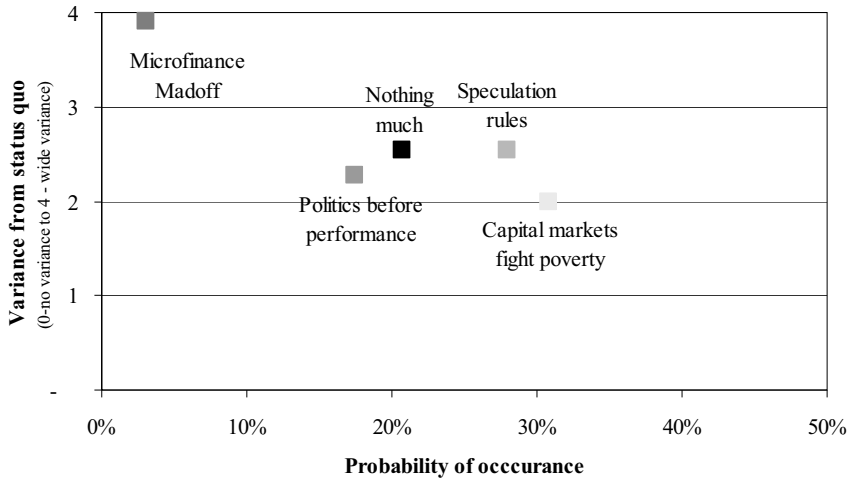


Figure 5-14: Probability of occurrence of described scenarios

5.2.4 Closing day

A third workshop took place in Pfäffikon SZ on July 17, 2009. The main objective of this meeting was a review and résumé of the scenario process microfinance. Furthermore, the final step of the scenario process was discussed. However, the scenario team had decided during the planning phase to hold this workshop only with key members of LGT Capital Management and the scenario team of Daimler AG.

5.2.4.1 Indicators and signposts

The definition of leading indicators and signposts enables an identification of the scenario path. These indicators are generally descriptors of the scenario process,

because they allow an assignment of the real world to the developed scenarios. Thus, parameters such as the leverage of MFIs, the market structure or the PAR30 were defined and integrated into a monitoring cockpit indicating the scenario path. In addition, sources for these indicators were analyzed. For example, the formation of a governmental incentive system such as tax remissions on returns for microfinance investors can be monitored in the press or regulation specialists and lobbyists might provide the information even in advance. As a consequence, a comprehensive monitoring cockpit evolves.

Indicator	Sources for indicator
Leverage of MFIs	Rating agencies, MIVs
FX-volatility	Bloomberg, own model
(Governmental) incentive system for investors	News, regulation specialists
Measurability of social return	Academic studies, SAM, GTZ
Professionalization	Expert questionnaire (local agents)
Market development: mobile banking	Expert questionnaire (local agents)
Market development: urban vs. rural	Expert questionnaire (local agents); volume, profitability
Due Diligence: consumer lending	Data of rating agencies
Volume of demand	TheMix, MicroRate, CGAP
Market structure	MFIs/volume
Investment indicator of MIVs	MIVs' investment model
PAR30 and write-offs	MIVs, MFIs, rating agencies

Figure 5-15: Indicators for a monitoring cockpit

5.2.4.2 Scenario process feedback

The participants of the scenario workshop provided their feedback at the end of workshop II. In workshop III, the scenario team discussed this feedback and analyzed the whole scenario process with key members of LGT Capital Management.

First of all, the group dynamic was discussed. The participants mentioned that the motivation curve was varying significantly. At the beginning, the team was excited. However, on the second day of workshop I the uncertainty-impact valua-

tion of descriptors was the emotional bottom. The process as well as some descriptors seemed unclear. Nevertheless, the scenario team tried to motivate the participants with the next conceptual step and a break. The development of scenarios in subgroups was the turning point in the process. The participants reaped the rewards of their hard and partially vague exercises beforehand. As a result, during the later process all participants formed a close group during the process work and in the evenings as well.

The scenario experts Dr. Ruff and Dr. Järisch explicitly highlighted the excellent selection of participants. On the one hand, the subgroups' expertise was well-balanced with experts of all fields needed and broad know-how. On the other hand, the solidarity and strong company of participants during the workshop and beyond was said to be exceptional for scenario processes. In conclusion, the selection of participants turned out to be a success.

The results of the process were analyzed critically. Firstly, the selection of descriptors and the development of scenarios were evaluated very positive by participants and the scenario teams. Thus, the basis of scenario analysis was commonly accepted. Secondly, the derivation of quantitative results was discussed more critically. On the one hand, the very positive equity return expectations were challenged. It might be the case that a group spirit influenced the process resulting in very high or very low estimates. On the other hand, it was explicitly said that the correlation would be expected to be dynamic and not static. However, this is a general problem in asset allocation processes and not specific for microfinance. Consequently, the scenario experts from Daimler AG perceived the process to be very profound, well thought through and at any time critically challenged by the participants.

The participants enjoyed scenario thinking and the innovative atmosphere of being out of business in the remote conference venue Schloss Freudenfels. It was clearly stated that this promoted "out of the box thinking" and of course increased the focus of participants on the workshop. Exceptionally, the participants succeeded in taking phone conferences, portfolio decisions, as well as executive board meetings in well in advance defined workshop breaks. As a result, very productive and focused workshop sessions, as few as possible daily business calls and pleasant leisure periods formed a unique and long-lasting experience.

LGT CM executives were impressed by the scenario tool as well as microfinance as an asset class. Several participants became convinced of scenario thinking as a powerful tool for various problem sets. Specific methods of the process are already being used in several processes. Furthermore, various problem sets are in pipeline for further scenario processes. In addition, in the meantime LGT CM has introduced microfinance debt investments in a balanced and a bond fund of a sustainable product family. Moreover, a reunion of the Freudenfels microfinance scenario participants took place on January 21, 2010 in Zurich. Finally, the amicable relations and established close ties across various backgrounds are a major benefit of this scenario process for all participants.

5.3 Implications of scenario process microfinance for asset allocation

The scenario process microfinance allowed an estimate of asset allocation parameters. During the process, return, risk and correlation parameters were derived from scenarios. These scenarios were built on a five to seven year time horizon. Hence, they match the time frame of a strategic asset allocation. In conclusion, the outlined scenarios generate adequate parameters of microfinance debt and equity investments for an asset allocation framework.

5.3.1 Parameters for the asset allocation framework

Return estimate

The return estimates for microfinance debt and equity are directly modelled during the scenario process (see Figure 5-16). On average, for microfinance debt investment, a return of 4% is expected. The overall return for microfinance equity investments is estimated to be about 20%. These two return estimates can be introduced directly into an asset allocation framework.

	Capital markets fight poverty	Nothing much	Speculation rules	Politics before performance	Microfinance Madoff	Overall regime
Weight	31%	21%	28%	17%	3%	100%
Return expectation MF debt	6.5%	1%	5.5%	3%	4%	4%
Return expectation MF equity	30%	-30%	45%	24%	20%	20%

Figure 5-16: Return estimates for microfinance debt and equity

Risk estimate

The derivation of risk estimates from a scenario process is more complex. The parameter “risk” is not obviously visible and measurable for people. However, the process clearly showed the risk components for microfinance investors. These are mainly default risks of microdebtors, foreign exchange risks, operational risks and illiquidity risks. The process allows two different concepts for an estimate derivation. Firstly, the returns for microfinance and the return and risk characteristics of other asset classes allow a derivation of microfinance risk out of the relative attractiveness assessment. Secondly, the underlying risk components are estimated individually and finally they are summed up. However, both approaches measure the same risks. Consequently, one would expect similar risk estimates.

The risk derivation from the relative attractiveness assessment of asset classes by workshop participants reveals a significant risk of microfinance. The participants scored microfinance debt to have one of the most unattractive risk/return profiles (see Figure 5-12).¹⁵⁴ Hence, in a ranking of asset class risk/return profiles, microfinance debt should be also among the least attractive asset classes. Global and EM government bonds have the worst return/risk profile according to return and risk parameter of asset classes outlined in chapter 6 and hence microfinance debt should have an even worse one. As a result, this method indicates that the process participants expect for microfinance debt a return/risk quotient of less than 0.4. A quotient of 0.4 would correspond to a risk of 10%. For microfinance equity investments, a quotient of about 0.45 applies (see Figure 5-17). As a consequence, the return esti-

¹⁵⁴ An analysis with Sharpe ratios instead of risk/return figures reveals very similar results.

mates of the scenario process and these return/risk quotients indicate a risk for microfinance debt of about 12-15% and microfinance equity of about 40%.

	Expected return	Expected risk	Return/risk	Rank	Rank process
Equities World	8.5%	18.0%	0.47	2	2
Equities EM	11.5%	25.7%	0.45	3	4
Gov Bonds World	3.0%	7.0%	0.43	5	6
Gov Bonds EM	4.0%	11.0%	0.36	6	7
Credit Bonds	4.5%	9.1%	0.49	1	1
High Yield Bonds	5.5%	12.7%	0.43	4	5
Microfinance debt	4.0%	<i>13.3%</i>	<i>0.30</i>		8
Microfinance equity	18.0%	<i>40%</i>	<i>0.45</i>		3

Figure 5-17: Rank of risk/return analysis and participants' assessment¹⁵⁵

A second approach applies by adding the risk components. This analysis is outlined for microfinance debt only. An in-depth analysis of microfinance equity risk was not performed in the scenario analysis process.

The first risk component is the default risk driven by the underlying business model. This risk is highly correlated with the default risk of the underlying microcredits. Overall, participants estimated a default risk of about 1.75% (Figure 5-18).

	Capital markets fight poverty	Nothing much	Speculation rules	Politics before performance	Microfinance Madoff	Overall regime
Weight	31%	21%	28%	17%	3%	100%
Default risk	0.5-1%	4%	1%	2%	2%	1.75%

Figure 5-18: Default risk of microfinance debt investments

A second risk component is the foreign exchange risk of the investment. The scenarios are enriched with a projection of foreign exchange volatility, which is highly correlated with hedging costs. Hence, on a hedged basis, the foreign exchange risk

¹⁵⁵ The italic return/risk figures are derived according to the ranking of asset classes. Out of these, a risk estimate is derived according to the return estimate generate in the scenario process.

is implied in the costs for hedging. On average, the scenario process estimates hedging costs of about 2%.

The operational and political risk is a third component of microfinance investment risks. Experts argued during the process that in microfinance operational and political risks are a major risk component directly affecting investments. This includes for example fraud, inappropriate risk management or political interventions. De facto, the result is a default or at least some loss. In contrast to the first risk component, this measure is not driven by microcredits. The operational and political risk is estimated to be about 2%.

The final component for the risk assessment is the illiquidity of investments. The debt obligations have a fixed maturity and are not tradable. Hence, for investors liquidity is limited. According to the illiquidity premium assessment in chapter 6, an illiquidity risk of about 7.5% applies for microfinance debt. As a result, an overall risk figure of about 13.25% results for microfinance debt by adding up the individual risk components of this asset class.

In conclusion, the risk of microfinance debt is estimated to be somewhere in the range of 12-15%. The bottom-up and the top-down risk assessments provide very similar results for microfinance debt investments. For equity investments, the top-down approach results in a risk estimate of about 40%.¹⁵⁶ These risk figures are introduced into the asset allocation framework.

Correlation estimate

The correlation is the third asset allocation parameter. Obviously, for the estimation of forward-looking correlations one needs a clear understanding of several asset classes in every scenario. The complexity of this step is immense. Hence, the above outlined approach was very time consuming. Furthermore, a reduction of the complexity was given by estimating correlations for only three other asset classes. As a result, participants were able to provide an idea for the correlation of microfinance investments with other asset classes (see Figure 5-13). The estimated correlations of

¹⁵⁶ Due to time restrictions a bottom-up approach was not performed during the scenario process.

microfinance investments with emerging market asset classes are used in the portfolio optimization.

5.3.2 Costs of a scenario process

A scenario process is a costly tool. The organisation and inclusion of various experts generates expenses and the process is also very time-consuming. The analysis of one asset class as outlined above includes more than 90 working days of senior and executives working days as well as about 50 days of preparation and process work in addition.¹⁵⁷ Assuming a conservative USD 2'000 per senior day and USD 500 per preparation day, the costs for human capital are more than USD 200'000. Furthermore, five seminar days for 16 people, a kick-off meeting, process planning meetings with the scenario experts as well as travelling expenses have to be taken into account. Consequently, a scenario analysis is a very expensive tool for asset allocation purposes.¹⁵⁸

5.4 Summary

The scenario process reveals four different futures and a negative impact scenario for microfinance. The scenario set includes very positive as well as negative scenarios for microfinance clients and the microfinance sector. However, in every scenario investors generate positive returns with microfinance debt investments ranging from expected 1%-6.5% per year with a scenario weighted average of 4%. Microfinance equity investments are similar to private equity and thus have a higher volatility with returns ranging from -30% up to 45%. The risk assessment for microfinance debt reveals four risk components. The default risk of the debt obligation, foreign exchange risks in the whole value chain, operational and political risk and finally also liquidity risks of microfinance investments. Overall, microfinance hard currency debt investments have a risk component of about 12-15%. Furthermore the workshop participants expressed a correlation of microfinance investments that is

¹⁵⁷ This includes five workshop days for 14 people (70 days), a kick-off meeting and further study time for two comprehensive pre-read packages (14 days) as well as scenario experts planning time (6 days). Furthermore, the preparation of pre-read packages, wrap-up of materials between the workshops and finalization of the workshop materials adds another 50 working days.

¹⁵⁸ Fortunately, this scenario analysis was sponsored by the Asset Allocation & Research department of LGT CM and by all participants and experts, who did not charge any fees.

clearly above market expectations. The story of microfinance being an uncorrelated asset class is clearly rejected.