



**Global Review of Innovation Intelligence and  
Policy Studies**

**Mini Study 06 – Microfinance & Innovation**

*(Yanuar Nugroho & Ian Miles)*

**A Project for DG Enterprise and Industry**

**Project coordinator:**

**Louis Lengrand  
& Associés**



**Project partners:**

**MIoIR  
University of  
Manchester**



**ANRT  
(Association  
nationale de la  
recherche  
technique)**



February 2009

## Executive Summary

This mini-study examines microfinance and innovation. The two themes are both extremely topical, and would seem to have obvious links. There has been some treatment of microfinance as an innovation itself, and of innovations that can support microfinance. But there is surprisingly little material readily available, at least not in the public domain, that explores the implications of microfinance for innovation.

This topic has gained an added urgency because of the current economic crisis. As is well known, the reckless lending of huge sums to the so-called "subprime" market has led to a serious shock to the financial system, with the result that many firms are now finding it hard to raise the finance that would have been unproblematic in earlier periods. The importance of considering new financial instruments has thus become even more marked.

The review of microfinance instruments, and of the constraints that innovators face, leads to the conclusion that microfinance could well support innovative activities of some kinds. Finance is a major constraint for innovators, especially for smaller firms. The benefits of microfinance are most likely to be experienced, then, by smaller firms, and by those undertaking relatively small-scale and/or less capital-intensive innovations. It could play a substantial role in enabling the diffusion of innovations that have been taken up by larger firms and enterprises and other organisations in more affluent regions, and which have thus been rendered cheaper and more user-friendly. It could support configurational activity, new service and software development, and some types of protection of new intellectual property.

The mini-study thus represents an early effort in bringing together the themes of microfinance and innovation. Microfinance should be explored as an innovation-enabling tool, both through analysis of existing case material and through action research. And innovation criteria could be added to at least some types of microfinance initiative.

**Disclaimer**

The views, opinions, findings, and conclusions or recommendations expressed in this mini study are strictly those of the authors. They do not necessarily reflect the views of the European Commission. The European Commission takes no responsibility for any errors or omissions in, or for the correctness of, the information contained in this mini study. The mini study is presented with a view to informing and stimulating wider debate.

## Table of Contents

<i>Executive Summary</i>	2
<i>Table of Contents</i>	3
<b>1 Introduction</b>	4
<b>2 Microfinance</b>	6
2.1 What is microfinance?	6
2.2 How does microfinance work?	7
2.3 Who are the actors in microfinance?	8
2.4 How is Microfinance evolving?	9
2.5 Major types of microfinance institutions	10
2.6 Capital structure	11
2.7 The Expansion of Microfinance	11
2.8 Microfinance in Europe	12
<b>3 Innovation</b>	17
3.1.1 Dimensions of innovation	17
3.1.2 Forms of innovation	17
<b>4 Microfinance and innovation</b>	21
4.1 Two sides of microfinance and innovation	21
4.2 Microfinance as Innovation	22
4.3 Innovation for microfinance	23
<b>5 Microfinance for innovation</b>	27
5.1 The financing of innovative and technological firms	27
5.2 Who Faces Financial Constraints on Innovation?	28
5.3 Smaller Firms and Innovation	32
5.4 Financing for Innovation	33
<b>6 Criticisms of microfinance</b>	36
<b>7 Policy implications</b>	38
7.1 Key stakeholders	38
7.2 Regulation and supervision	39
<b>8 Conclusions</b>	42
<b>References</b>	44

## 1 Introduction

Financing innovation has been a longstanding concern, especially in the EU - where there is a widespread perception that there is more difficulty in raising finance for innovation than in the USA. Lack of finance is cited as a major obstacle to innovation by firms responding to the Community Innovation Survey, as well as appearing as a major issue in numerous less systematic or large-scale studies. At the time of the "dot com bubble", venture capital became prominent as a major source of R&D funding, with numerous small firms reportedly raising funds for pursuing their (sometimes) new ideas from this source. The "dot com crash" has led to less emphasis on this role of venture capital – at least it is not being hailed as a dominant source of R&D funding – but it may well be seen as more significant again in the future. The current economic crisis has posed questions about the future role of all types of financing instruments, with many firms – even large and established ones - experiencing difficulty in raising loans.

Microfinance has been proven to be resilient during the previous financial crises<sup>1</sup>. Thus, it is not surprising that in the present economic crisis, there are high hopes that microfinance will prove to be robust – and even become more vital. Not only is it hoped that microfinance will remain a viable tool for development, but also that it will become a substantial alternative for financing innovation – in both developing and developed economies. Of course it is all yet to be seen whether microfinance schemes can meet this expectation.

Microfinance has been long proposed as an instrument (or set of instruments) relevant to stimulating entrepreneurship in developing countries and deprived regions. Even before the current economic crisis, it had been becoming of interest to investment companies, too. This is probably largely because the returns from microfinance have been held up as rather impressive ones. (See below for discussions of Europe and the developing world.) This could be a new avenue for financiers to explore – and it certainly appears more stable than the "toxic debts" that have upset the financial systems of many countries. At present, there may be high caution about microfinance as about other forms of investment, since we would expect many small firms to confront tough times with market downturns and rising unemployment, but again this may be alleviated by an economic revival.

As microfinance (along with other financial services provided by non-financiers) has attracted more attention in the development context, so it has become of growing interest as a possible solution (or part of the solution) to the problems of small firms in more industrialised countries. Most attention has been focused on developmental issues such as support for peripheral and deprived regions and socially excluded groups in these countries. Relatively little analysis has dealt with microfinance as an

---

<sup>1</sup> A 'crisis talk' in the World Bank website has made this case. See: <http://crisistalk.worldbank.org/2008/11/microfinance-an.html>

alternative route to financing innovation that can help overcome shortcomings in established arrangements for so doing.

This mini-study aims to review available contemporary documents relevant to this theme. The focus of the work will be on empirical studies of microfinance, rather than on prescriptive arguments and proposals for sophisticated new designs for instruments. This will be situated within the context of EU innovation policy and efforts to establish innovation financing. As noted, the literature directly relating innovation to microfinance is rather sparse. Microfinance **for** innovation has attracted little analysis, though there are streams of work on (a) microfinance **as** innovation itself – what are the blockages, barriers, success factors, agents of change, etc.?, and (b) innovation **for** microfinance - the role of technological and organisational innovation in supporting microfinance (e.g. social networking tools and sites as ways of achieving outreach to non-conventional investors and for linking investors and innovators). These streams of work are themselves inherently interesting (not least in that they tell us things about service innovation and the technologies and strategies that can support it), and are worth examining in this context (since they tell us things about the orientation to innovation of those involved in microfinance, and may be relevant to the sorts of innovation required in microfinance if these instruments are to support innovation more generally).

## 2 Microfinance

### 2.1 What is microfinance?

The World Bank defines 'microfinance' as the financial services provision to the low-income clients, including consumers and the self-employed (Ledgerwood, 2000). These clients are usually borrowers who are considered "unbankable" by the conventional financial service. Though they may well be people experiencing financial difficulties, in many cases, the repayment rates of loans are high (sometimes as high as 97% (Callaghan et al., 2007)).<sup>2</sup>

Microfinance describes small-scale financial services like loans, remittances, insurance, savings, etc which reflect the heterogeneity of financial needs of their clients. In practice, however, the term is often used in a much narrower sense to refer to services provided by microfinance institutions (MFIs) to deliver loans to unsalaried borrowers with little or no collateral – which is often called '*microcredit*'<sup>3</sup>. In the EU context, *microcredit* has been defined in 2003 as involving loans below €25,000 (EC, 2003b) that could help microenterprises, i.e. businesses with fewer than ten employees, and with turnovers (or balance sheet totals) that are less than €2 million (EC, 2003a). In most cases, MFIs can make small loans in developing countries thus may be as little as \$50; in the EU, microcredit has been defined by EU Institutions as a loan below €25,000 (Mulfinger and Aguinaga, 2003)<sup>4</sup>.

Other financial products targeted at poor and low-income people are also often included within the scope of Microfinance; these include savings, insurance, money transfers, and other instruments of this sort. It is important to be aware of the range of instruments – each of which can be elaborated in various ways – not least because most of the literature and discussion focuses on a fairly narrow set of instruments, especially microcredit. The MFIs also provide other financial products and services, designed for the sort of borrowers they deal with, such as insurance and provision for deposits, as well as business training and networking opportunities.

Due to the varied needs that are encountered, microfinance services are mainly characterised by their size: they are **microfinancing**. This is the key definitional characteristic, rather than features such as the formality

---

<sup>2</sup> The rates associated with various illicit loan schemes ("loan sharks" in English parlance) may be much higher than this, of course. These illicit schemes may resort to extreme measures to recover money from their borrowers, and are more concerned with methods of extortion than with assessing creditworthiness: typically their clients (or victims) are those whom official institutions would not regard as creditworthy. The high rates associated with some microfinance schemes will be based, in contrast, on serious risk assessment of their clients.

<sup>3</sup> Microcredit refers to very small loans, typically provided by legally registered institutions to unsalaried borrowers who have little or no collateral, according to the Microfinance Gateway website - <http://www.microfinancegateway.com/section/faq#Q1>. Consumer credit provided to salaried workers, based on automated credit scoring, is usually not included in the definition of microcredit, although there are arguments suggesting that this should and may change.

<sup>4</sup> See EMN website [http://www.european-microfinance.org/microfinance\\_unioneuropeenne\\_en.php](http://www.european-microfinance.org/microfinance_unioneuropeenne_en.php)

of a client's enterprise, collateral requirements, methodology, geographical context, originating institution, or the use of services for production or consumption (Callaghan et al., 2007).

A definition based on size reflects the general assumption that lower income groups and those with restricted access tend to use smaller scale financial services. As microfinance is designed to meet the financial needs of those excluded from formal financial services, it helps them to finance their income-producing activities, build assets, stabilise consumption, and protect against risks. That is why these services are not limited to credit – though this is arguably the basis of the most common services - but also they include savings (deposit), insurance, and money transfers. Among these forms of services, *microcredit* and *saving (deposit)* services seem to be the most commonly researched<sup>5</sup>.

Whether or not it is as novel as has been claimed, microfinance has certainly gained recent world attention as an important new financial service—the UN declared 2005 the “*International Year of Micro-Credit*”, and the 2006 Nobel Peace Prize was awarded to Muhammad Yunus, the founder of Grameen Bank in Bangladesh (Callaghan et al., 2007).

## 2.2 How does microfinance work?

Microfinance offers the services one would expect from any financial institution, including loans, deposits and money transfers, but it lends small amounts to clients that traditional financial institutions would not deem creditworthy. As noted, the most common microfinance product is microcredit loans; ‘microloans’ that are typically less than \$100 and sometimes as small as \$50. (These figures can be quite substantial in developing country contexts, but in the European context we would expect larger sums to be involved – the EU figure cited above was several hundred times larger, more than the cost of a new car though still below the typical price of housing.)

Typically, to acquire credit from an MFI, loans are secured against the ‘honour’ of a peer group of clients (i.e. social collateral), instead of using personal collateral. If one client fails to make payments, others in the lending circle will be denied future credit. Thus, the peer group takes on joint liability, and acts as the control group to ensure loan repayment. Peer pressure encourages borrowers to be selective about their group members and to repay loans completely and on time. High repayment rates are thus common here. But there are some studies suggesting that for a variety of reasons, group lending mechanisms may not work well in contemporary Europe.<sup>6</sup> It would also be interesting to know just how far

---

<sup>5</sup> A string search in Google Scholar results in 4,550+5,210 entries for “micro credit” and “microcredit” keywords; 10,200 for “saving”; 6,780 for “insurance”; and 678 for “money transfer”, when queried together with the word “microfinance” (as per 12 November 2008)

<sup>6</sup> See, for example, de Aghion & Morduch (2000), von Pischke (2003 and other essays). On the other hand, Corsie et al (2005), exploring Mediterranean MFI, concluded that group lending tended to be associated with more favourable outcomes for women, and Vigenina & Kritiko (2004), in a study of Georgia, concluded that a mixture of group and individual lending techniques was required to reach all target groups. An empirical study that explores the relative costs and benefits of different mechanisms – for example the monitoring costs involved with individual as opposed to group lending – is Cull et al (2005).

these methods encourage or discourage novel types of risk and enterprise, as opposed to a more conservative orientation. There is a large social psychological literature on the so-called "risky shift" (by which groups of some types take more risky decisions than would be expected if we simply averaged the preferences of individual members).

The cycles of microfinance loans are usually shorter than traditional commercial loans: 6-12 months of payments, plus interest due weekly. Such cycles and payments help the borrowers stay current, preventing them from being overwhelmed by large payments. But such cycles mean that running microfinance schemes can be very expensive. This is the rationale given for MFIs to charge interest rates that are relatively high (e.g. around 35% p.a.).

The main sources of finance for MFIs are usually charities, governments and international organisations. Donor and subsidy capital is not unlimited, and the microfinance industry may need to become more self-sufficient in financing if it is to grow enough to serve its potential market. Recently, structured financings for microfinance institutions that offer returns to investors at market rates that are commensurate with risk have been developed. Such transactions may be paving the way for microfinance institutions to be able to access public financing markets in order to meet demand.

### **2.3 Who are the actors in microfinance?**

Helms identifies **four general categories of microfinance providers** (Helms, 2006: 35-57). He argues that a pro-active strategy of engagement is needed with all of them, in order to help them achieve the goals of the microfinance movement:

- Informal financial service providers: moneylenders, pawnbrokers, savings collectors, money-guards, Rotating Savings and Credit Associations (ROSCAs), Accumulating Savings and Credit Associations (ASCAs), and input supply shops. As they share the same community, they understand each other's financial circumstances and can offer flexible, convenient and quick services. However, these services can also be costly and the choice of financial products limited and short-term. Informal services that involve savings are also relatively risky.
- Member-owned organisations: self-help groups, credit unions, hybrid organisations (like 'financial service associations' and CVECAs, a self-reliant village savings and credit bank - from the French *Caisse Villageoise d'Epargne et de Crédit Autogérée*). They are generally small and local and have access to good knowledge about each others' financial circumstances and can offer convenience and flexibility. Although the costs of operation are low, these providers may have little financial skill and can run into trouble in an economic down-turn or if their operations become too complex.

- NGOs (Non-Governmental Organisations): By the end of 2005, there were 3,133 microcredit NGOs lending to about 113 million clients<sup>7</sup>. These NGOs have spread around the developing world in the past three decades and proven innovative in developing banking techniques like solidarity lending, village banking and mobile banking, which are claimed to have overcome barriers to serving poor populations.
- Formal financial institutions: commercial banks, state banks, agricultural development banks, savings banks, rural banks and non-bank financial institutions. They are regulated and supervised, offer a wider range of financial services, and control a branch network that can extend nationally and internationally.

Typical microfinance clients are low-income individuals, especially in the developing world, who do not have access to formal financial institutions. Microfinance is often used to support or start small scale entrepreneurial or self-employed ventures, often household-based.

With appropriate regulation and policy, MFIs can assist in solving the main problem of microfinance from the financial perspective of lenders – that is, ensuring that clients will repay loans and interest. (Of course, there can be wider perspectives, such as those involving the application of the money to the stated social, economic, and/or innovative ends.) . For example, regulatory and policy frameworks may be established to link self-help groups to commercial banks, to network member-owned organisations together to achieve economies of scale and scope, and to support efforts by commercial banks to ‘down-scale’ by integrating mobile banking and e-payment technologies into their extensive branch networks.

## **2.4 How is Microfinance evolving?**

The evolution of microfinance has been impressive. From its beginnings, as a social mission driven by NGOs, microfinance has rapidly diversified, both in the kinds of institutions providing service, and in the array of services it provides. This has attracted wealthy philanthropists like George Soros and Pierre Omidyar (co-founder of eBay) to pledge hundreds of millions of dollars to the microfinance movement. Global commercial banks, such as Citigroup Inc. and Deutsche Bank AG, are today also establishing microfinance funds.

Despite its celebrity and progress, some major regions in the world remain woefully under-served. With the current large and growing demand, the only way to sufficiently increase the supply of microfinance seems to be through commercialisation. This requires a number of challenges to be addressed - e.g. creating a conducive climate to commercialisation, attracting private sector investment, and putting microfinance institutions on a more sustainable footing. Ideas of ways to address these challenges include:

---

<sup>7</sup> See <http://www.microcreditsummit.org/pubs/reports/socr/2007.html> *State of the Microcredit Summit Campaign Report 2007*, Microcredit Summit Campaign, Washington, 2007.

- To encourage established private financial institutions to enter the market by making financial systems more competitive.
- To have governments play critical and constructive roles, to ensure sound policies and legal frameworks (including macroeconomic stability).
- To encourage donors to contribute by reducing inappropriate government interventions and by helping countries strengthen their legal frameworks, regulatory systems, and supervisory ability: there are roles here for governments themselves, international agencies, and consultancies and NGOs.
- To help support alternative financial institutions (e.g. state-owned rural banks, national savings banks, postal savings banks, and savings and credit unions) harness their potential to serve more clients, on a larger scale, on a profitable basis.

## ***2.5 Major types of microfinance institutions***

Major types of MFI can be understood from the institutional innovation perspective. With microfinance, institutional innovation does not always mean creating a new institutional type, but may be the adaptation of an existing institutional type to the constraints and potentials of a certain client group, in a specific local environment.

Major types of MFI are:

- The cooperative model. Inspired by the success in Europe and North America at the end of the nineteenth century, this was the first model to introduce microfinance in developing countries. The cooperative members are the owners, contributing to the equity capital through shares. Loans are only granted to the members. Cooperative MFIs solely focus on the provision of financial services.
- Solidarity credit groups. Here, three to ten clients join a group to receive access to financial services (primarily credit), prior to them saving before receiving a loan. In addition, non-financial services are offered to group members, such as training or access to market information. Group members collectively guarantee loan repayment, and access to subsequent loans is given only once previous loans are paid in full.
- Village banks. The village bank is effectively a mix between the cooperative and solidarity group models, seeking to capitalise on the advantages of each. The village bank usually has fewer members than a cooperative, and is less formalised and complex in structure. Some international NGOs promote the establishment of village banks. Their main form of credit guarantee relies on peer pressure amongst members, as is the case in solidarity credit groups.
- The Linkage model. This model builds on existing informal self-help groups, such as rotating credit and savings associations (Sika and Strasser, 2000). It seeks to combine the strengths of existing informal

systems (client proximity, flexibility, social capital and reaching poorer clients) with the strengths of the formal system (e.g. risk pooling, term transformation, provision of long-term investment loans and financial intermediation across regions and sectors).

- Microbanks with individual financial contracts. Other MFIs are member-based (i.e. members contribute in the management, ownership and control of the MFI). Microbanks (e.g. BancoSol in Bolivia), rely on individual contracts between the institution and its client. Although this type of MFI is closest to the conventional banks, the loan collateral approaches are usually non-conventional.

## **2.6 Capital structure**

Most MFIs employ high leverage, and finance their operations with long-term (as opposed to short-term) debt. Highly leveraged microfinance institutions perform better by reaching out to a wider clientele, enjoying economies of scale, and thus being better able to deal with moral hazard and adverse selection, enhancing their ability to deal with risk (Kyereboah-Coleman, 2007).

Various factors, other than stage in the life cycle, seem to be associated with the performance of MFIs. Recent research by Bogan (2008), for example, indicates that the size of assets and capital structure of MFIs are associated with performance. In terms of sustainability and outreach, asset size is important: a measure of grants received by MFIs (from donors such as charities, governments and international organisations) as a percentage of assets is significantly and negatively related to sustainability and is positively related to MFI cost per borrower. Bogan also finds evidence to support the assertion that the use of grants drives down MFI's operational self-sufficiency. She suggests that long term use of grants may be related to inefficient operations due to lack of the competitive pressures that would be associated with attracting market funding. Notably, the results do not indicate that grants are related to greater or more costly outreach. Thus, grants could hinder the development of MFIs into competitive, efficient, sustainable operations (Bogan, 2008)

## **2.7 The Expansion of Microfinance**

Although it is often claimed that the number of MFIs are increasing, and that organisations play a pivotal role in their expansion both in the developed and developing world, little systematic research on the distribution of microfinance has yet been undertaken; estimates vary considerably.

A few years ago, one estimate was that more than 67 million households were served by microfinance programmes (Armendáriz-de-Aghion and Morduch, 2005: 3). Slightly earlier, in 2004, a useful benchmark was established through an analysis of 'alternative financial institutions' in the developing world (Christen et al., 2004). This counted approximately 665 million client accounts, at over 3,000 institutions serving clients poorer than those served by the commercial banks. Of these accounts, 120 million were with institutions normally understood to practice

microfinance. It also included postal saving banks (318 million accounts), state agricultural and development banks (172 million accounts), financial cooperatives and credit unions (35 million accounts) and specialised rural banks (19 million accounts). The highest concentration was in India (188 million, representing 18% of the population) while the lowest were in Latin American and the Caribbean (14 million, representing 3% of the population) and Africa (27 million, representing 4% of the population). *MicroBanking Bulletin*, at the end of 2006, was tracking 704 MFIs serving 52 million borrowers (\$23.3 billion in outstanding loans) and 56 million savers (\$15.4 billion in deposits). Of these clients, 70% were in Asia, 20% in Latin America and the balance in the rest of the world<sup>8</sup>. Microfinance Information Exchange (MIX) has produced fairly recent data (Gonzalez, 2007) indicating that, based on the data from 2,207 MFIs, representing 77 million borrowers in 100 countries, most MFIs are concentrated in South Asia and Sub-Saharan Africa, while most borrowers are concentrated in South Asia, and East Asia/Pacific region.

## 2.8 Microfinance in Europe

The very small amounts of money typical of some microfinance in developing countries are often not very relevant for businesses – even small businesses – in Europe. However, some definitions of microfinance relate the size of loans (etc.) to the income levels of the country in question, making the “micro” in microfinance a relative affair. The MIX definition is:

Microfinance services – as opposed to financial services in general – are retail financial services that are relatively small in relation to the income of an individual, household or enterprise. Specifically, the average balance of microfinance services is no greater than 250% of the average income per person (GNI per capita).<sup>9</sup>

With incomes in EU countries averaging tens of thousands of euros and with the scope for variation implied in the term “average” in this definition, it is clear that for at least some accounts of microfinance the amounts involved can be substantial – around the price of a house in many countries, for example.

In the European context, microfinance apparently started with the introduction of microcredit in Central and Eastern Europe after the fall of the Berlin Wall (though credit unions and similar instruments had been in use for at least a decade earlier). With the banking sector unable to respond to emerging needs, microcredit filled the gap by providing transitional support for people needing to enhance their livelihood. In a relatively short time, MFIs in Central and Eastern Europe and in the Newly Independent States had attracted more than 1.7 million borrowers and 2.3 million depositors, with an average client growth rate of 30% per year. In addition to MFIs, NGOs are also involved in the provision of

---

<sup>8</sup> See *The MicroBanking Bulletin* #15, Microfinance Information eXchange, 2007, pp. 30-31

<sup>9</sup> [http://www.themix.org/about\\_micro.html](http://www.themix.org/about_micro.html) accessed December 18 2008.

microfinance in Eastern Europe. Commercial banks, too, are increasingly interested and they downscale in order to provide microloans for the poor (it is not clear from the published accounts if, and to what extent, small companies are explicitly included). The microfinance sector thereby continues to expand and become more structured<sup>10</sup>.

In Western Europe, the growth of MFIs has been more limited, although the interest in their potential is apparently increasing. Microfinance remains a fairly recent phenomenon in this region, despite some historical background through institutions like the Raiffeisen Bank (Germany), lending charities (England), and the co-operative model of the "Casse ruralie" (Italy). In the Netherlands, for example, the *Committee for Microfinancing* sees microfinance as having great potential in encouraging entrepreneurship. The Committee believes that microfinance would positively impact economic growth, help integrate disadvantaged groups, and reduce unemployment. This can be done through various local initiatives to help target groups receive simple funding models and coaching networks (Committee for Microfinancing, no date). Further, the Dutch government takes the position that "*micro-credits must become available for individuals wishing to start their own business, with extra attention being paid to entrepreneurs in the ... disadvantaged neighbourhoods.*" (p.5).

Not only in the Netherlands, in other countries like Spain, France, UK and Finland, too, microfinance has been supported as encouraging small and medium enterprises (SMEs). This is closely related to the tendency, in the EU, to see microfinance as primarily being a tool for *economic growth* and *social cohesion* (EC, 2007). SMEs are seen as motors of job creation and economic growth – and as the only bright hopes for private sector employment in many disadvantaged regions. The argument that they can be important innovators is often at best secondary. Although microfinance was initially viewed as an economic issue – promoting entrepreneurship – the correlation between lack of access to finance and social exclusion has been increasingly acknowledged. Many small and medium enterprises (SMEs) and families lack access to financial services despite the existing banking network (this has been exacerbated during the present financial crisis); and financial exclusion is concentrated among those suffering from poverty and social marginalisation. This has an economic as well as social impact. The ability of the banking system to reach and serve such small entities is crucial for the achievement of general socio-economic improvement. Exclusion from banking services often constitutes a major obstacle to the launch of new business activities (Evers, 2007; Evers and Lahn, 2006). Microfinance services can fill this gap in that microcredit can help foster entrepreneurship by facilitating business start-ups and granting microloans to the unemployed and marginalised can make them economically independent players, able to participate more fully in a financial society. Hence, microcredit plays an important role in

---

<sup>10</sup> See [http://www.european-microfinance.org/europe\\_microfinance\\_en.php](http://www.european-microfinance.org/europe_microfinance_en.php)

contributing to the Lisbon strategy for growth, employment, and social cohesion, as defined by the European Union.

Micro and small enterprises form the core of the Western European economic system, representing 99% of the two million start-up enterprises that are created every year. One third of these enterprises are launched by the unemployed<sup>11</sup>. In the EU context, recent research which has studied the determinants influencing the capital structure of European SMEs is relevant (Viviani et al., 2008). Since nearly all (99,8%) of European companies (20.5 million) can be classified as SMEs, the EC defines these as “the real giants of the European economy” (EC, 2003c; Euractiv, 2006a; 2006b). The issue of the financing of SMEs is thus very important in the European context<sup>12</sup>. Viviani et al (2008) suggest that debt is generally the most important funding source for SMEs, as it represents 60% of total assets. The major part of the debt is composed of short-term loans, implying that perhaps access to these is not a strategic choice, but an instantaneous and uncontrolled necessity. It seems that generally, small European firms are likely to finance themselves with a defined order, preferring internal finance to external capital. With regard to growth, the study finds that banks favour companies that show a greater *recent* growth; that a phase of expansion can enhance reputation and reduces the problems of opacity and informational asymmetries. Moreover, it seems that credit institutes do not penalise those SMEs that have greater growth opportunities – they do not just help out those in most difficult circumstances, nor do they necessarily withdraw from engagement with those who are displaying successful performance. This enables SMEs to plan their strategy in the long period, with the chance of creating a match between the duration of their debts and the estimated payback time of their investments.

In the EU, the role of microfinance in regional cohesion policy is being reinforced, through the new programmes: *Joint European Resources for Micro to Medium Enterprises* (JEREMIE)<sup>13</sup> and *Joint Action to support microfinance institutions in Europe* (JASMINE)<sup>14</sup>.

---

<sup>11</sup> See [http://www.european-microfinance.org/europe\\_microfinance\\_en.php](http://www.european-microfinance.org/europe_microfinance_en.php)

<sup>12</sup> While many studies concentrate on the capital structure and the financial policy decisions of SMEs, only few of them consider international differences in capital structures of SMEs and their determinants. Viviani et al (2008) investigate this issue and the relation between the capital structure and the innovation level, using a sample of European SMEs and analyse the determinants of their capital structure in an attempt to try to explain how innovativeness, growth and risk affect it. Making a good use of the data from AMADEUS (a pan-European database that contains information on about nine millions firms in more than 40 countries) the study also analyses the impact of the country effect on the European SMEs' capital structure.

<sup>13</sup> JEREMIE was set up in 2006 as part of EC and the European Investment Fund (EIF) initiative to set up a special credit facility which focuses on microfinance and SME (see [http://www.european-microfinance.org/microfinance\\_unioneuropeenne\\_en.php](http://www.european-microfinance.org/microfinance_unioneuropeenne_en.php)) JEREMIE is part of the European Regional Development Fund (ERDF) and develops through two phases: preparatory (2006/07), and operational (now). JEREMIE transforms part of regional and ERDF budget into loan capital which will be channelled through intermediaries, including MFIs. See <http://www.eif.org/jeremie/activity/index.htm> .

<sup>14</sup> The EU launched a new initiative for the development of microcredit to support of growth and employment and aims at providing effective support for the promotion of microcredit in EU in

JEREMIE was initiated by the DG Regio at the EC in October 2005. It combines resources from EC, National Public Authorities, EIF<sup>15</sup>, EIB and/or other International Financial Institutions (IFIs). JEREMIE is a series of coherent actions with three main targets: (1) to optimise the use of ERDF funding to enhance SMEs' access to finance through sustainable and revolving financial instruments; (2) to leverage ERDF funding with EIB loans as well as improve EIF expertise in creating tailor-made instruments; and (3) to develop the role of Entrepreneurship in EU Regional Policy<sup>16</sup>. While it is stated that special emphasis will be given to supporting the Lisbon growth and jobs agenda, by emphasising technology transfer, start-ups, technology and innovation funds and micro credit,<sup>17</sup> there is little documentation of what the relationship between innovation and microfinance may be.

JASMINE complements JEREMIE by providing the additional element: mentoring. With a total budget of EUR 50m, JASMINE, financed by the EIB (European Investment Bank) and supported by the European Commission, is scheduled to start operational implementation in early 2009. JASMINE is aimed at providing help to MFIs to improve their operational quality; to expand and to become sustainable<sup>18</sup>. JASMINE does not support the establishment of completely new MFIs. It is clear from its objectives that JASMINE aspires to establish partnerships with banks and financial institutions active in support of MFIs ('additionality'). JASMINE targets MFIs who are willing to operate on a sustainable long-term basis (rather like banks) rather than on an ad hoc or temporary one), new branches of well-established MFIs, MFIs in their development phase - and also greenfield MFIs who are willing to act in underserved areas (in the EU-27).

The first funding agreement under the JEREMIE initiative in Italy was signed by The European Investment Fund and Campania Region (Naples) to set up a JEREMIE Holding Fund of EUR 90 million. Through financial intermediaries and by means of matching contributions from the ERDF,

---

2007. This initiative includes JASMINE (see [http://www.european-microfinance.org/microfinance\\_unioneuropeenne\\_en.php](http://www.european-microfinance.org/microfinance_unioneuropeenne_en.php)). This programme represents an EU initiative for the development of microcredit to support of growth and employment and aims at providing effective support for the promotion of microcredit in the EU. See <http://www.eif.org/attachments/about/JASMINE/JASMINE%20Flysheet.pdf> The EIB contribution will be matched by a 50% contribution from other banks; investments will take the form of medium to long-term loans and/or quasi-equity; and technical assistance services will include the training of staff, the recruitment of loan officers, the improvement of internal processes and the spread of best market practices. But JASMINE will not fund micro-enterprises directly or provide grant funding to them.

<sup>15</sup> Whose slogan, "INNOVATIVE FINANCE TO FINANCE INNOVATION", is deployed when discussing JASMINE – see for example: <http://www.inais.e.org/doc%20download/San%20Sebastian%202006/Patrice%20Liauzu.pdf>

<sup>16</sup> See the presentation at the INAISE annual conference 1-2 June, 2006, slide available <http://www.inaise.org/doc%20download/San%20Sebastian%202006/Patrice%20Liauzu.pdf>

<sup>17</sup> At [http://ec.europa.eu/regional\\_policy/funds/2007/jji/jeremie\\_en.htm](http://ec.europa.eu/regional_policy/funds/2007/jji/jeremie_en.htm)

<sup>18</sup> In some respects, JASMINE finalises the SME Guarantee Facility "Special Microcredit Window" which was created by the Competitiveness and Innovation Programme (CIP, 2007-2013) and managed by the EIF. Besides channelling funding provided EIB, by JASMINE also provides technical assistance (training of staff, recruitment of loan officers, and improvement of internal processes) for MFIs. See [http://www.european-microfinance.org/jasmine\\_en.php](http://www.european-microfinance.org/jasmine_en.php)

during 2008-2013 this funding will provide additional resources in the form of guarantees for portfolios of loans, risk capital and microcredit to innovative start-ups, micro-enterprises and well-established SMEs in the region<sup>19</sup>. In Poland, there are three levels at which JEREMIE actions will be implemented during the period 2007-2013. At the national level, through Operational Programmes (OP) Innovative Economy, ERDF allocates EUR 153 million to the National Capital Fund (KFK). At the second level, OP Development of Eastern Poland, ERDF allocates EUR 5 million and at the regional level, where five regions participate (Wielkopolskie, Pomorskie, Zachodniopomorskie, Dolnoslaskie and Lodzkie) the allocations vary between about EUR 40-60 million.<sup>20</sup>

These programmes have been launched in relation to an innovation agenda, though this does not yet feature extensively in their documentation. It is hoped that as experience grows, evidence of the scope of these MFIs to contribute to SME innovation will accumulate.

---

<sup>19</sup> See [http://www.european-microfinance.org/news\\_en.php?pild=8979](http://www.european-microfinance.org/news_en.php?pild=8979)

<sup>20</sup> See [http://ec.europa.eu/regional\\_policy/conferences/od2008/doc/presentation/08C30\\_BESCHEL.ppt](http://ec.europa.eu/regional_policy/conferences/od2008/doc/presentation/08C30_BESCHEL.ppt)

## 3 Innovation

### 3.1.1 Dimensions of innovation

The term **innovation** generally means a new way of doing something. It can be an idea, practice or object that is perceived as new by a unit of adoption (Rogers, 2003:11). This definition covers the diffusion of innovations as well as their initial creation and application. Innovation is usually understood to be distinct from invention. While invention is the first occurrence of an idea for a new product or process, innovation is the first attempt to carry it through into practice (Schumpeter, 1934). Obviously they are closely linked and difficult to distinguish one from the other (Fagerberg, 2005), but to put it short, while invention is about an idea made manifest, innovation is about ideas applied successfully. The (simplistic, but effective) notion is that invention (creation of the idea) precedes first innovation (exploitation of the idea) and then diffusion (roll-out or adoption of the realised idea in wider contexts). Commonly, "innovation" is employed to refer to all stages, though care needs to be taken to differentiate these different aspects.

The literature on innovation is extensive, covering a wide range of topics<sup>21</sup>, with increasing attention paid to neglected forms of innovation (e.g. organisational innovation) and locations of innovation (e.g. service industries). Innovation studies have traditionally been dominated by industrial economists and geographers but there appears to be a trend towards cross-disciplinarity, since understanding the processes and outcomes of innovation requires analysis from many angles. Still, the study of innovation is weighted toward the market sectors of the economy, with less attention to innovation in public services (despite a blizzard of research into e-government and e-health) and less still to voluntary organisations and communities as sources and users of innovation.

### 3.1.2 Forms of innovation

The potential role of microfinance in innovation needs to be related to different **forms of innovation**. One standard and useful distinction between different types of innovation is that between *product* and *process* innovation. Product innovation is the introduction of a new good or service, or one that is substantially improved. This includes, but is not

---

<sup>21</sup> Among the main foci are: the process of innovation and the economic factors determining the development and diffusion of innovation (Kay, 1993; Rogers, 2003), patterns of innovation and diffusion (Frambach, 1993; Rogers, 2003; Wejnert, 2002); and the relationships between organisational structure and technological capacity (Burns and Stalker, 1961; Kanter, 1988). Based on Schumpeter's idea of creative destruction and the economics of technological change (Schumpeter, 1934), innovation studies have been undertaken mainly in commercial, private, industrial sectors with a focus on manufacturing (Freeman and Soete, 1997), and lately also in services (e.g. Coombs and Miles, 1999; Metcalfe and Miles, 1999; Miles, 2005). Recent development draws attention to innovation in state and governmental bodies, mainly to improve government productivity and the effectiveness of services it provides for public (see, for instance Dunleavy, 2006; Halvorsen et al., 2005)

limited to, improvements in functional characteristics, technical abilities, or ease of use. It is not supposed to include minor customisation and superficial/aesthetic design characteristics, though there have been some calls for such activities to be included, perhaps as “soft” innovations.<sup>22</sup> Successful product innovation is vital to many firms. The (commercial) success of a new product typically depends on how well the product's design meets customers' needs (Rothwell et al., 1974). Process innovation is the implementation of a new or significantly improved production or delivery method (OECD, (2005: para 163). This includes significant changes in the techniques, equipment and/or software used to make or deliver the product. Process innovations can be intended to decrease unit costs of production or delivery, to increase quality, or to produce or deliver new or significantly improved products.

It may be argued that these two categories of innovation are insufficient – where, for example, do we put innovations in the supply chain management, marketing, or customer interaction functions? Is delivery so clearly a process innovation in many services, or is it part of the service product – or something else altogether? But the basic distinction serves as a useful starting point in many discussions. What light does it throw on microfinance?

Microfinance is a product innovation in the sense that it introduces services which are new – providing financial assistance to small clients considered ‘unbankable’ by other traditional financiers. Additionally, new methods are developed within microfinance schemes – for instance, in order to ensure the repayment of the loan where no collaterals are guaranteed - and thus microfinance is typically associated with process innovation too. Indeed, the conventional product cycle account would lead us to expect that, early on, microfinance innovation would focus on developing and refining the new product, and later on focus on improving the efficiency of the processes whereby it is produced and delivered. The focus may thus shift to process innovation and away from product invention and innovation (though introducing a new or improved product typically requires some process innovation, in the sense of new routines if not that of new technologies).

Effective design of the microfinance services - both in product and process respects - requires linking technological (and organisational) and market possibilities. The link has to align the product and its delivery with the users' location, situation, and requirements. Collaboration among different parts of the financial institution is needed for a new product and process

---

<sup>22</sup> Stoneman (2007) describes aesthetic innovations as “soft innovation”, distinguishing between (1) Innovation in products that are “themselves largely aesthetic in nature (e.g. music, books, film)... to be found particularly in those industries sometimes called the ‘creative industries’”. (Although just what constitutes novelty, or how much novelty there is, will be an issue.) (2) Innovation in industries whose output “is not aesthetic per se but functional.... for example new designs of cars, new food products, redesigned electrical products etc. This has been largely ignored in the past because the TPP [technological product or process] definition has emphasised functionality...” Such product differentiation is not usually regarded as innovation, but Stoneman argues that at least some of this is best seen as innovative activity. The discussion has been extended recently in studies of innovation in creative industries – cf Miles and Green (2005), who discuss content innovation and a range of organisational and business model innovations.

success. A talented entrepreneur may be able to envisage and introduce something new, but more typically we are dealing with organisations for whom innovation requires new internal coordination.

One innovation is not the same as another: the significance of a better mousetrap is clearly different from that of a better microprocessor. Some innovations involve products or components of products that underpin whole systems of production; some involve products that are of far more restricted use. One familiar definition, explicated most resonantly by Chris Freeman (1986) differentiates between incremental, radical, and revolutionary innovations. This classification has been most articulated with respect to technological innovations, and particularly concerning innovations that can be used in industrial processes – which are often the products of upstream sectors. One point about the origins of innovations (in the primary and secondary sectors, particularly) is that incremental innovations are often developed in practice, while more dramatic ones are more likely to flow from R&D or similar intensive activities of problem-solving. Incremental innovations may be important in terms of increasing productivity, efficiency or quality, but do not typically demand much in the way of retraining, new technical guides, new industrial and business structures. More radical changes are characterised by such requirements, but also offer opportunities for new production systems, new products and markets. Revolutionary innovations are defined in terms of their offering scope for radical change across many or even all sectors of the economy. IT is such a revolutionary technological innovation, offering new ways of processing information – an activity inherent in all economic processes. IT's continuing rapid development means ongoing opportunities for transformation of business and public service activity in all economies, and all sectors. With the low cost of new IT, a quite radical process innovation – such as switching from manual typewriters and printing methods to word processing and desktop publishing - can be relatively cheap in financial terms for the adopter, though it may be very demanding in terms of new skills, organisational routines, linkages to suppliers, and so on.

Most innovations build on existing products and processes, involving reconfiguration and modification to existing functions and practices. This may be more or less incremental. More radical innovations change the entire order of producing goods and delivering services, making old methods and routines obsolete. Radical innovation thus entails organisational changes, including procedure, process, structure, and strategic development as the case may be - ranging from innovations in the organisation's control systems, allocation of resources, technology, and structure to changes in strategy, rather than a single type of change (Tushman et al., 1986). The difference between incremental and radical innovation which has long been of interest to many scholars (Chiesa et al., 1996; Christensen, 1992; Henderson and Clark, 1990; Tushman and Romanelli, 1985).

In principle, incremental innovation reinforces the status quo, whereas radical changes are characterised by "reorientation wherein patterns of

consistency are fundamentally reordered" (Tushman and Romanelli, 1985:174). Incremental innovations may be continuous, modified, and process ones (Herbig, 1994). Continuous innovations constitute augmented changes to products; modified innovations comprise slightly more disruptive innovations such as the introduction of a new technology that performs the same basic functions as the old one and process innovations consist of improvements in the way an existing product is produced.

Radical innovations often serve to create new industries, products, or markets (Herbig, 1994; Meyer et al., 1990). They usually encompasses significant technological advances that enables entire industries to emerge, change or disappear and to open up a whole new markets and product applications (Henderson and Clark, 1990; Kaplan, 1999; Tushman and Anderson, 1986). New service innovations, with less of a technological basis, may also effect radical change – self-service supermarket stores, for instance, as compared to traditional over-the-counter shops. Koberg et al (2003) note that while incremental innovations are usually

low in breadth of impact and comprising the following broad categories: procedural (management-determined innovations in rules and procedures); personnel-related (innovations in selection and training policies, and in human resource management practices); process (new methods of production or manufacturing); and structural (modifications to equipment and facilities and new ways in which work units are structured) (Koberg et al, 2003: 23-24).

Radical innovations are seen as

... major in scope and breadth, involving strategic innovations or the creation of new products, services, or markets ... strategic changes in product/services, markets served, and technological breakthroughs used to produce a product or render a service based on significant innovation (ibid: 24).

The distinction between incremental and radical innovation helps us understand the influence of the environment, organisation, structure, processes, and managerial characteristics on these types of innovation. It is particularly relevant to examining microfinance as an innovation itself, though we could anticipate that most innovations seeking microfinancial support will be more incremental. These are liable to require lower levels of financing, and to be less challenging to business partners.

## 4 Microfinance and innovation

### 4.1 *Two sides of microfinance and innovation*

As is suggested by this global recognition and the ongoing attention being given to it, the core services of microfinance, and some of the ways in which these are produced and developed, have novel elements. Even if some of the core ideas have been around for a long time, and even if there have been relevant schemes in previous periods, we are seeing new actors emerging, and established actors behaving in new ways. Thus, *microfinance can be seen as an innovation in financial services*, and this perspectives underlies one stream of literature.

As we have stated, the heart of this innovation is the development of methods to deliver loans to vulnerable individuals or groups, with little or no collateral. Such innovation is markedly valuable as it makes money available for investments or expenses at the time and place required. Microfinance services such as credit, savings and remittances allow the clients to improve their liquidity management, be they families or companies. These methods include:

- group lending and liability,
- pre-loan savings requirements,
- gradually increasing loan sizes, and
- implicit guarantees of ready access to future loans if present loans are repaid fully and promptly.

While the basic ideas here may seem straightforward and simple enough, the development of procedures and routines to ensure that they are deployed effectively (for the institution and the client) is no trivial matter.

Much of the attention to microfinance for entrepreneurs has concerned enabling start-ups or survival of small businesses in underdeveloped areas. Often these are not developing innovations in the sense of 'new to market', or 'new to sector' products or processes. The small business or start-up is often producing some fairly familiar product, using some relatively standard methods. Sometimes this will represent the introduction of the product to a new market or geographical area, and this can be seen as a form of diffusion. Such diffusion may enhance quality of life, or provide productive inputs to other businesses, in the area. Sometimes small amounts of funding will support modernisation of existing processes, for example in the introduction of new computer or communication facilities in just about any sector. In such cases, we are typically dealing with diffusion (of innovations that may or may not be well-established in other markets) to the firms, which may mean lower costs or better quality products for consumers and business customers.

When microfinance provides financial services to companies, it can be used to help them diversify and enlarge their income sources, and thus have an improved ratio of expense and revenue. In general, the recipient companies can benefit from microfinance services, if they can use them to generate additional income and/or to reduce costs.

This means that microfinance can help enable companies to innovate by freeing up resources: enabling them to create additional value by reducing the transaction costs of access to financial services. Of course, the companies might choose not to innovate, but simply to extend their operations (or, in difficult circumstances, to survive temporarily adverse conditions, or to buy time to restructure themselves to fit these circumstances). But, *microfinance can also be used as an alternate means to finance innovation*. This can take various forms. Microfinance may support acquisition of basic equipment, as mentioned above. It can facilitate larger investments by lengthening the term structures of loans. It can support improvement of the companies' business practices by encouraging and allowing them to elaborate improved business plans and models and to value their resources adequately.

#### **4.2 Microfinance as Innovation**

Microfinance provides financial services (products) to clients that are considered "unbankable" by the conventional financial institution. Microfinance institutions (MFIs) also develop new techniques and methods (processes) to ensure that the services both reach the targeted clients - and yield profits. MFIs innovate in terms of rules and procedures to ensure clients' repayment. This includes training policies and human resource management practices which aim at modifying financial facilities and structuring the working units to provide services. (This resembles accounts of incremental innovation). The impact of the new product can be major, especially in the developing world, where many microfinance schemes and services bring new products to markets, occasioning strategic changes in financial services (so having more of the characteristics of radical innovation), and also impacting upon clients by pressing them to undertake new business processes in order to achieve creditworthiness.

As already discussed, among the innovative features of microfinance are:

- new methods of providing credit to the borrowers (e.g., the usage of social collateral such as group guarantee instead of personal physical collateral, progressive lending approach, peer pressure and peer monitoring);
- approaches to mobilisation of savings from the clients and linking credit provision to savings;
- emphasis on social mobilisation processes, involving awareness building and formation of self-help groups, and
- provision of other services, such as insurance, to cover risks and distress faced by the clients.

Microcredit is probably the most prominent of the financial service innovations covered by the term "microfinance". Other services that the term covers include microsavings, money transfer vehicles and microinsurance. These services have become diversified and attracted not only small family business and SMEs in developing economies, but also to small (but fast growing) small companies in developed countries. This

reflects the universality of credit<sup>23</sup> and its importance in many development contexts.

### 4.3 Innovation for microfinance

Technological innovation – especially involving new Information Technology (IT) can be, and has been, exploited to improve the efficiency, scale and quality of microfinance services. Six technologies are catalogued by the Microfinance Gateway (CGAP) as having been adopted by MFIs – we add some notes about relevance in the European context in italics after each is described:

1. **Automated Teller Machines (ATMs)** facilitate transactions that would otherwise require staff attention (e.g. retrieving account information, accepting deposits, drawing down on pre-approved loans, and transferring funds). They are familiar in banks and some other financial institutions around the world. As with commercial banks, ATMs are most effective for MFIs that accept savings and want to serve customers in multiple locations and/or during non-business hours.<sup>24</sup> By using ATMs, MFIs can focus human resources on providing personalised services. *ATMs are widely diffused across Europe, and it might be appropriate to focus strategy on linking to available ATM networks. However, there might be scope for new public ATM terminals to be supported, for example in post offices or other community facilities.*

2. **Interactive Voice Response (IVR) Technology.** This helps MFIs clients to quickly get information via telephone rather than by travelling to a MFI office and request the service in person<sup>25</sup>. *Call centre systems have a very mixed response in the European context, and the scale of the microfinance venture would determine whether it is worth investing in such a solution rather than a more conventional and more local personal CALL SERVICE.*

3. **Smart Cards.** The use of Smart Cards can help MFIs deliver services like managing savings accounts, disbursing loans, or making transfers. With the ability of the card to store all relevant client's information (e.g. account balances, credit, etc. including personal identification) it functions as an electronic passbook on which transactions can be recorded once, speeding up the process and improving accuracy<sup>26</sup>. *Smart card systems have taken a long time to become familiar in many European countries, but are now widely accepted tools whose production costs have plummeted.*

<sup>23</sup> The Nobel-laureate Yunus even believes that 'right to credit' should be recognised as a human right. See <http://www.voanews.com/bangla/archive/2006-11/2006-11-17-voa11.cfm>; <http://muhammadyunus.org/content/view/21/36/lang/en/>.

<sup>24</sup> However, since a single machine can cost very high (sometimes as much as US\$ 35,000) and requires reliable electric and communications connections, ATM technology may not be the first choice for all MFIs. See: [http://www.cgap.org/docs/IT\\_atm.html](http://www.cgap.org/docs/IT_atm.html)

<sup>25</sup> See [http://www.cgap.org/docs/IT\\_ivr.html](http://www.cgap.org/docs/IT_ivr.html)

<sup>26</sup> See [http://www.cgap.org/docs/IT\\_smart\\_card.html](http://www.cgap.org/docs/IT_smart_card.html)

4. **Personal Digital Assistants (PDAs).** MFIs staff can benefit from the use of PDAs, which can be customised to run specific programs to manage MFIs and client's data and perform financial calculations. PDAs can help officers who are away in the field provide electronic data concerning clients/borrowers which can be useful for loan applications and review and approval<sup>27</sup>. *Increasingly smart phones and PDAs are also available to the users of microfinance services, so there is scope for more sophisticated service development – for example for clients to access basic information and complete standard questionnaires.*

5. **Biometrics Technology.** Despite being new, biometric methods of measuring individuals' unique physical characteristics, for purposes of identification, are being adopted by MFIs who have become alerted to the importance of data security. Some MFIs find low-cost biometric technology to be preferable to passwords and PINs to access the clients' financial data<sup>28</sup>. *Biometrics has been somewhat controversial, but is increasingly accepted for passport and similar uses. Banks are exploring voice recognition systems, but it remains to be seen whether any low-cost biometrics will be really secure against determine fraudsters. Such fraudsters might be less inclined to attack MFIs as if they were clients, and the main dangers (as usual) are liable to involve "inside" criminality.*

6. **Credit Scoring.** Credit scoring systems technology analyse the pattern of clients' historical data to predict how they will act in the future, and can help MFIs make more reliable decisions on loan applications, collections strategies, marketing, and client retention. The scoring technology can also be used in more advanced ways, such as pricing loans in relation to individual client risks, and for provision against loan losses<sup>29</sup>. *There are already many credit-checking bodies in Europe – and much criticism of their sometimes erratic treatment of individuals who are seeking loans through normal channels. MFIs may well have different criteria for treating bankruptcy, etc., and may be less satisfied with these services than established institutions.*

We can anticipate that innovative uses of IT will proliferate around MFIs. For example, it is well-known that in several African countries, where PCs and Internet access are not readily available in many regions, mobile telephones have come into their own. Mobile phones have been deployed as "electronic purses" that can be used in transactions of various sorts, and it is plausible that microfinance can find uses for such systems (perhaps in combination with IVR or PDA technology). This may be a case of innovation emerging from developing countries and being transferred to the industrial world.

Microfinance in general has already benefited from the advancement of Internet technologies, which has meant that people are able to now take part in the microfinance movement from across the world. One example of how this new technology is being implemented is in the creation of

---

<sup>27</sup> See [http://www.cgap.org/docs/IT\\_pda.html](http://www.cgap.org/docs/IT_pda.html)

<sup>28</sup> See [http://www.cgap.org/docs/IT\\_bio.html](http://www.cgap.org/docs/IT_bio.html)

<sup>29</sup> See [http://www.cgap.org/docs/IT\\_credit\\_scoring.html](http://www.cgap.org/docs/IT_credit_scoring.html)

microfinance websites, such as [www.kivaB4B.org](http://www.kivaB4B.org), which acts as an online broker connecting donors and recipients (which can be individuals, SMEs or MFIs)<sup>30</sup>. Another example is [www.microplace.com](http://www.microplace.com), a for-profit subsidiary of eBay, which facilitates online peer-to-peer micro lending, enabling people to invest in microbusiness. A recent case is [www.myc4.com](http://www.myc4.com) (My Care For), which, like microplace, enables investors (private, organisations and companies) to invest in African microbusiness and SMEs<sup>31</sup>.

As increasing numbers of people have access to the Internet, the web or social networking technologies can be used to promote the microfinance movement and to provide funds for investment in micro-businesses. Websites can link individuals and small businesses, including allowing lenders to review the profiles of SMEs seeking financing. (Typically these profiles concern region, gender, social issues and the economic sectors involved – they could also include information directly related to innovation.) More specific applications (e.g. online payments as offered by providers like PayPal or online credit card services) can then be used to enable lenders to transfer the money to MFIs, which will then pass the money on to those launching a small business directly or through a network of partners (which can be quite literally worldwide).

Models such as Kiva, Microplace, and MyC4 aim to attract social investors who want a personal connection as well as a return on investments (social and/or financial). Funds from relatively affluent people may thus become a major source of personal lending to the poor. The challenge here is in the formative years, in setting up a strong network of microfinance institutions that can effectively mobilise and deploy volumes of cash. Here, strategic use of the latest Internet technologies (like Web 2.0 and social networking) can be crucial. Online microfinance (Kiva, Microplace, MyC4) is likely to grow and thereby contribute to the popularising of the MFI movement. While more donors may be engaged, with more information resources, there are some concerns that online models are liable to be more distant and inflexible than conventional peer-to-peer lending, and that the use of the Internet will not only popularise microfinance among lenders, but also move it into closer rapprochement with established, corporate financial institutions. Such institutions, acting on a profit-driven model, may be less concerned with social benefits of microfinance, which is liable to be reflected in the sorts of project financed. Speculatively, this might have implications for the types of innovation fostered through microfinance – for example, innovations with quick yields might be favoured as opposed to those that are ultimately more sustainable or more broadly socially beneficial.

The application of new IT to business and social relationships is often a source of concerns about standardisation and depersonalisation of

---

<sup>30</sup> Kiva is a nonprofit charity that allows donors to choose individuals to donate to. Kiva bridges the donors and the recipients and the donors can use Internet application like PayPal to send money to Kiva which will then send the money to the local MFI coordinating the transaction.

<sup>31</sup> MyC4 has been in beta since May 2007 and the first 150 loans in Uganda have been founded from more than 800 investors (and investor groups) from 35 countries. Ivory Coast will join MyC4 as the 2nd country in Africa and another 51 to follow step-by-step.

services, threats to privacy, and the like. Microfinance is no exception. There is a valid concern that with MFIs relying upon IT to facilitate their services – such as the offering of advice – might weaken the value, scale and/or depth of guidance. But it should be noted that the virtual networks can actually span many agents. The recipient of a loan, and the ultimate supplier of the money, may be intermediated by organisations of several sorts- as noted, a charitable virtual fund-raising network may choose to link to another organisation that disburses, and local organisations (that assure creditworthiness, etc) can also be part of this network. There is a clear responsibility to ensure that the information flows in question are secure, are handled promptly, and that the human touch is not lost in the process.

Challenges of this sort are worth examining in more depth, though this is not the place to do so. The likelihood is that the innovation that is microfinance will expand and evolve through making use of other social and technological innovations. The implications of this convergence of innovations could be profound.

## 5 Microfinance for innovation

While microfinance is widely celebrated as a possible solution to the financing problems of smaller firms and microbusinesses, there is remarkably little examination of the connection between microfinance and innovation. For example, a Google search on "microfinance for innovation" yields no "hits", and similarly for "microcredit for innovation" – and the picture does not change when we preface "innovation" with "technological" or similar terms. (The similar applies to a search using Google scholar) In contrast, simply entering "microfinance" and "innovation" as search terms together yields 455,000 "hits". (Data for Google scholar: 7,930)<sup>32</sup> These latter results are accounted for by the fact that microfinance itself is considered an innovation; that there continue to be innovative products and processes emerging within microfinance; and innovations in, especially, Information Technology, can be applied to microfinance.

The conclusion seems to be that microfinance is discussed overwhelmingly in terms of rationales other than boosting innovation. It is, of course, likely that some of these aims will be associated with innovative processes and practices. Reducing the cost of access to financial services, like microfinance can offer, benefits companies directly. The possibility of making larger investments improves the income and economic capacity of clients and better valuation processes facilitate larger loans to existing clients and engage clients who would not be served otherwise. These are the possible links when thinking about microfinance for innovation. But in order to explore this possibility, we need to consider the rationales for microfinance in more depth, and then consider different sorts of innovation, and the role of finance in innovation.

### 5.1 *The financing of innovative and technological firms*

Innovation is widely believed to be a response to competitiveness pressures and to enhance competitiveness. For example, (Baldwin et al., 1994; Baldwin and Johnson, 1995) show that in Canada, innovative firms have better market performances than non-innovative ones.

It is self-evident that some innovation activity will be hindered by financial constraints. (Indeed, the poor performance of some or all EU countries in respect of innovation is often attributed to the difficulties innovators face in raising finance). What is less obvious is just how great an obstacle this is liable to be and what sort of firm and innovative activity might confront this obstacle. Here, there would appear to be a great deal of scope for using the Community Innovation Survey (CIS) to explore matters further, since it asks about factors that hinder innovation; and indeed there have been some very enlightening studies using CIS data. But our review of the literature has failed to unearth studies that address all of the questions we would need to have answers for in order to see whether microfinance is liable to be part of the solution to the problems.

---

<sup>32</sup> These search data come from searches conducted on 5 December 2008.

There is strong evidence to support the idea that finance is among the most important factors hindering innovation. Thus Canepa and Stoneman (2002) analysed CIS2 data, concluding that financial constraints are of more importance than other internal and external factors in constraining innovation. These were major obstacles in terms of impacts on projects not starting, being delayed or postponed. These authors suggested that cross-national differences were in part explained by differences in financing across countries. Finance appeared to be more of a constraint in market-based systems than it was in bank-based systems. Reviewing results from the CIS3, Eurostat (2004) noted:

Among the economic factors that are listed as part of CIS3 ...innovation costs appear to be the most often cited reason why innovation activity is hampered, followed by a lack of appropriate sources of finance and excessive perceived economic risks. Within the EU, almost one quarter (24 %) of enterprises with innovation activity cited the cost of innovation as a hampering factor, while 19 % cited a lack of appropriate sources of finance and 17 % excessive perceived economic risks (Eurostat, (2004)33).

## ***5.2 Who Faces Financial Constraints on Innovation?***

Each of the obstacles cited by Eurostat (2004) (cost of innovation, lack of appropriate sources of finance, excessive perceived economic risks - all of which have a financial dimension) tended to be more prevalent among service firms than those in the manufacturing industry; this could be related to the typically smaller size of service enterprises. But looking more closely at the results (cf p63 of the Eurostat 2004 report) it turns out to be the high-tech services – computer and engineering business services for example – that report outstandingly high levels of the finance-related problems. Returning to the question of firm size, the Eurostat report went on to note that:

As a general rule, the proportion of enterprises that regarded selected hampering factors as highly important decreased somewhat as the enterprise size-class increased. In other words, hampering factors affect proportionally more small enterprises than large ones. One of the most typical hampering factors faced by SMEs was a lack of appropriate sources of finance ... Indeed, this category had the largest difference between the proportion of small and large enterprises citing it as highly important (6 percentage points), as 16 % of small enterprises reported a lack of appropriate sources of finance compared to 10 % of large enterprises. Other factors that were ranked relatively highly by SMEs were the high cost of innovation and the excessive perceived economic risks associated with innovation.... (Eurostat, 2004:49).

Figure 1 displays CIS3 results. Smaller firms do report financing and related problems more often, as we might expect. But these are common problems; and while they are the most frequently cited, they are not the only problems encountered.

There are variations across countries, but our ability to say much about EU-US differences – the question that arises when attempting to account for differences in economic and productivity growth – is limited. This is because the statistical data for the US is not always comparable to EU data. Cosh et al (2005) report findings in which data was obtained using CIS-type instruments for the US (for business sector and manufacturing sectors only).

Innovation costs and lack of sources of finance generally emerge as more important for smaller firms in these sectors in CIS analyses (sometimes strikingly so – though not in the Netherlands), but in the “Innovation Benchmarking Survey” conducted in the UK and US this was less evident. (See [Figure 2](#)), for reasons that are not entirely clear (the survey samples were structured in different ways than the CIS surveys, which aim to be nationally representative). So we may need to be cautious about these results – but they did not show any dramatic difference in the incidence of finance-related problem in the UK and US for similar samples – while regular CIS surveys do depict a great deal of variation between EU countries

SMEs have constraints in using their own funds and are in a weaker position regarding the appropriability of the results of their innovation activities. SMEs fund innovation through their cash flow, and often this does not allow the level of commitment required by long-term innovation programmes. Using R&D as a proxy for innovation, (Bond et al., 2003) found that in both the UK and Germany there is a real constraint upon companies investing in innovation: companies who fund their innovation programmes from their own resources prefer to use available funds (cash flow) which are usually very limited. The study reported that in the UK, despite the well-developed financial and capital markets there, there was more volatility and lower overall investment in innovation development than in Germany – though how far this can be attributed to the financial system alone is debatable.

Generally SMEs face considerable problems in seeking the funds necessary to innovate. Intangible activities like R&D or innovation are considered riskier, so that SMEs face a higher cost of capital. Yet, often intangible assets are undervalued when being used as collateral for credit. This results in reductions in the amount of capital debt raised. Considering this, SMEs investing in technology and innovation have a higher chance of finding difficulties in accessing credit than other SMEs which focus on more traditional businesses. High transaction costs, the risk connected to their business, the limited possibility to appropriate innovations and the difficulties of lenders to understand the real value of innovative projects are all factors that seem to limit the capability of innovative SMEs to raise external funds (Stiglitz, 1993).

Figure 1 Obstacles to Innovation across different types of firm (Percentage of enterprises that regarded selected hampering factors that they had experienced as highly important, EU, 1998-2000)



Source: Based on data in Eurostat (2004)

Indeed, a large share of SMEs report barriers to innovation in the access to external sources of financing (Hoffman et al., 1998). These difficulties are mostly caused by the fact that intangible assets are specific to each company, and are hard for banks and other creditors to deploy in the case of bankruptcy. The banks will perceive this as a risky investment, and request a higher interest rate (Brewer et al., 1996). This affects the capital structure of innovative and technological SMEs, which show some distinctive features compared to that of other firms (Viviani et al., 2008). It is understandable that innovative SMEs operating in new sectors (and thus having a high risk level) will face difficulties in finding financial support. Sau (2007) argues that this is due to the inability of the market

to develop mechanisms to screen and monitor applicants, so as to reduce the informational opacity and the risk connected with the concession of financing. A study of an SME sector in Ireland (Hogan and Hutson, 2005) showed that when innovative SMEs are forced to get external funds, they tend to look for equity rather than capital debt. For this reason, in their early life, innovative SMEs tend to prefer financial instruments that can better manage risk. (This is something that demands further research).

Figure 2 Results from Innovation Benchmarking Survey

**Business Services, 2000**

Total sample

Size class	Belgium	Germany	Italy	Netherlands	Portugal	Finland	UK	UK_IB	US_IB
<b>No innovation activity due to costs of innovation</b>									
10-249	6.1%	32.1%	12.1%	3.7%	22.6%	11.9%	19.4%	30.8%	29.5%
>250	0.0%	19.6%	5.5%	14.5%	0.0%	8.3%	10.3%	33.0%	33.3%
<b>No innovation activity due to lack of sources of finance</b>									
10-249	12.8%	29.8%	14.0%	8.0%	31.1%	7.7%	22.4%	24.1%	21.9%
>250	0.0%	12.8%	2.4%	6.2%	0.0%	4.1%	5.3%	26.6%	37.5%

Manufacturing, 2000

Sample: Innovation active

Sizeclass	Belgium	Germany	Italy	Netherlands	Portugal	Finland	UK	UK_IB	US_IB
<b>No innovation activity due to costs of innovation</b>									
10-249	12.0%	31.9%	19.3%	5.3%	32.8%	4.9%	25.3%	24.1%	27.1%
>250	10.2%	21.9%	14.0%	8.7%	28.2%	7.3%	21.4%	31.6%	25.9%
<b>No innovation activity due to lack of sources of finance</b>									
10-249	11.3%	23.0%	14.8%	6.6%	27.0%	3.8%	16.8%	24.7%	24.0%
>250	11.0%	7.9%	9.1%	5.6%	16.2%	2.2%	13.8%	25.9%	29.1%

Source: Cosh et al, 2005

However, with banks often relying on collateral as protection for loans, there is a difficult situation for innovative SMEs. For these companies, a great proportion of the firm's value is about future activities (or the 'value of growth opportunities' as (Myers, 2001) terms it. However, with these activities being intangible, banks are less willing to accept them as collateral. There seem to be opportunities to use microfinance to enable innovative SMEs to extract themselves from these financing difficulties.

We go on to explore what we can say about the types of innovation that might be involved in larger versus smaller firms, and which ones might face greater or lesser constraints in terms of financing.

### **5.3 Smaller Firms and Innovation**

(Bogan, 2008; Viviani et al., 2008) have carried out studies which may shed some light on to what extent SMEs can benefit from microfinance schemes, especially with regards to their innovativeness. Employing nearly two-thirds of the EU private sector workforce, SMEs are the economic backbone of Europe and are responsible for the creation of half of all new jobs. What is more important is the fact that nearly half of the two million European industrial SMEs are market innovators, which makes SMEs crucial to Europe's innovation and technological breakthroughs (EC, 2003c; Euractiv, 2006a; 2006b). However, recent EC research reveals that Europe is falling further and further behind the United States in R&D investment (which is vital for innovativeness) and this is mainly due to decreasing R&D investment by European SMEs. Helping SMEs to invest more could thus help Europe to achieve the Barcelona target of increasing research spending to 3% of GDP by 2010 (EC, 2006). Certainly small firms can be innovative: in the US, SMEs were found to have more than double the innovations per employee than larger ones (Baron, 1993).

Small firms may report facing finance-related obstacles to innovation more frequently than larger firms, and it is smaller firms for whom we might expect microfinance to be most relevant. As Eurostat (2004) pointed out, the challenges of innovation might differ between larger and smaller firms:

While the failure of an innovation project may jeopardise the very survival of a small enterprise, it is less likely to do so for larger structures, where there are generally more diversified activities that can compensate for the loss of a failed project (Eurostat, 2004: 49).

This might be one factor making smaller firms less likely to embark upon more radical and large-scale innovation projects. Tether et al (1997) are among several researchers who have demonstrated that smaller firms are less likely to be sources of more radical innovations; and analyses of CIS and other surveys indicate that their shares of expenditure and turn-over on innovative activities (R&D and other activities) also tend to be smaller.

Nevertheless, not all innovations are radical and large-scale, and there is likely to be much scope for smaller firms to adopt small-scale innovations. If larger firms are typically more pioneering innovators, then there is scope for imitation, catch-up and diffusion. Sometimes costs of innovation do not descend rapidly, so the uptake of innovations by smaller firms might be expected to be relatively delayed. Sometimes, in the case of many recent IT-based innovations, for example, costs do fall rapidly, and there may be a rapid take-off with little lag between early and later adopters. We can imagine that relatively small amounts of finance might be required to purchase equipment, technical support and computer services like databases and web design tools. Finance might also assist with other stages in the innovation process: protecting intellectual property; developing markets and even activities such as preparing business plans and scanning the competitive environment.

The implication is that the financial barriers reported by small firms might involve relatively small amounts of money, for relatively small-scale innovations. These might be fairly routine process innovations – acquiring new computer, refrigeration or transport equipment, for example - or support with relatively inexpensive aspects of product innovations – testing of local markets, checking conformance with standards or requirements for environmental or service quality, applying for patent or other IP protection, etc. Consultancy or other advice, establishment of websites, and many other innovation-supporting activities could also be mentioned. In some cases, microfinance could be a solution. Such innovation financing would not be particularly significant in terms of pioneering major innovations, but it could play a significant role in enabling smaller firms to keep abreast of technology developments that larger firms are undertaking.

Of course, some small enterprises are liable to be highly innovative – for example, start-ups and spin-offs that are built around new methods and knowledge in areas such as biotechnology, IT and environmental services. GEM (2006) explored how far early-stage entrepreneurs (in high and low income countries) are innovators. Fewer than half of them, in both types of country, considered their products to be new to their customers; fewer than a fifth considered their products to be “new to market” (in other words, the products were already familiar to some other consumers). However, even fewer owners of established businesses see themselves as innovative, so the role of some small firms as innovators is apparent. But this is often not technological innovation. Most of the early-stage entrepreneurs did not report that they were using new technology; small proportions did consider themselves to be using the latest technology.

Whether the sorts of activity indicated here are ones that can be enhanced via microfinance is not a topic addressed by this study. It is likely that some activities would benefit from relatively small-scale financing, though we would suspect that many technology-based innovations will require substantially higher levels of funding, such as that involved in venture capital or similar schemes. There may be more scope for relatively low-cost non-technology-based innovation to benefit from microfinance, and we could see scope for application in the protection of intellectual property by funding patenting, for example.

#### **5.4 Financing for Innovation**

Canepa and Stoneman (2002) suggested from their CIS2 analysis that “riskier” newer industries are more constrained by financial difficulties. Canepa and Stoneman (2008) went on to suggest from CIS2 and CIS3 analyses of UK data, that the impact of financial constraints upon innovative activity is more severe in higher tech sectors (as well as for smaller enterprises). Similarly, Bugamelli et al (2003), focusing on innovation advancing “the new economy ” concluded that financing the new economy has more to do with traditional firms investing in IT than with the creation of new IT-producing firms. Thus they discounted the view that finance is a major obstacle to the development of the new

economy in Europe in general, though there could be specific difficulties in countries like Italy, where firms tend to be small, on average.

More generally, Rivaud-Danset (2001) used a range of approaches to explore whether financial institutions are biased against innovators. Since the evidence from CIS2 and elsewhere seemed to suggest that innovators can actually access more long-term credit than non-innovators, she concluded that there was no such bias. She suggests that the importance accorded to finance in preventing innovative projects is due to financial directors considering that these are too risky and thus refusing financial support, while delays in completion of innovative projects are more likely to reflect issues such as human resources and organisational rigidity (though the picture varies across countries, with finance being important in the UK<sup>33</sup>). Later still, problems may be associated more with lack of market responsiveness. Rivaud-Danset (2001) did note the importance of venture capital as a key financing mechanism for high-tech firms with high growth potential.

The preceding discussion has argued for the relevance of considering microfinance as a response to the financial constraints faced by small companies, when it comes to innovation as to other aspects of the business. The current financial crisis, and the increased difficulties many firms are confronting where it comes to raising money, makes this response appear evermore relevant. However, it is necessary to take the limits of microfinance schemes into account too. Expectations of microfinance should be realistic – and the general financial crisis may well mean that some expectations have to be trimmed for MFI as well as for mainstream banks.

Indeed, when the current financial crisis is taken into account, it should be understood that unlike the crises in 1990s, where microfinance was largely a closed system that was only loosely attached to the currency market and its crises, microfinance is now far more connected to the banking system which suffers from the crisis. There is at least a possibility that the global recession in the longer term will also impact upon the microfinance system: this is a topic that requires close monitoring.

In the context of Europe microfinance can often be a first step towards formal or even legal work. 'Moonlight workers' – people developing their own businesses in their spare time, people working outside of the formal economy (sometimes illicitly while in receipt of benefits) - often do not have access to formal financing, but MFI can work with them and help them build credit history so that gradually they can improve their financial profile. In order to do this, the loan scheme that microfinance offers must be small and flexible, with easy and affordable administrative requirements<sup>34</sup>, and an effective advice.

---

<sup>33</sup> She suggests that the UK may have particular problems of linkages between finance and innovation – at least in the 1990s.

<sup>34</sup> See, for example, French initiative - <http://www.lautoentrepreneur.fr/>

There might be an interesting link between microfinancing and innovation vouchers<sup>35</sup>. Both of them deal with small amounts, minimal bureaucracy and maximum accessibility. Under innovation vouchers the public reimbursement for support services is paid directly to the service provider that the SME has chosen, rather than to the SME itself (which simply gets the voucher). There is scope for coordinating the loan part of microfinance with support services (e.g. coaching, business/ innovation services) which could be publicly reimbursed through vouchers or other schemes.

---

<sup>35</sup> Innovation vouchers are small grants that can be spent on improving links between SMEs and sources of innovative knowledge such as consultants and Universities. See the UK report "Innovation Nation", at <http://www.dius.gov.uk/docs/home/ScienceInnovation.pdf>, for a definition used in UK regions.

## 6 Criticisms of microfinance

One criticism of microfinance concerns its governance. In microfinance, governance refers to the mechanisms through which donors, investors, and other providers of funds are ensured that their funds will be used according to the intended purposes (Hartarska, 2005). Such control mechanisms are necessary because managers and providers of funds in MFIs may have diverging preferences and objectives (principal-agent theory problem) and complicate the analysis of their governance. For example, besides aiming for financial sustainability, MFIs mission to serve small clients make them operate in nonprofit ways, like charitable NGOs. MFIs are actually similar to banks in that they are regulated and require collateral (although social) from clients. The tension between an MFI's outreach mission of serving clients and its need to maintain its financial sustainability underpins much criticism of microfinance. Debate on whether outreach and sustainability are substitutes or complementary is ongoing (Morduch, 2000; Navajas et al., 2000).

Using data from Central and Eastern Europe and the Newly Independent States, Hartarska (2005) concludes that different factors have differential effects on outreach and sustainability of MFIs. Some mechanisms that align the interests of managers with those of other stakeholders may have a limited role in microfinance. Moreover, since MFI managers must consider the interest of clients and the financial sustainability of the institution at the same time, managers perform multiple tasks. This can lead to

a costly lack of focus and standard mechanisms of control such as performance-based compensation become less effective, while the board of directors becomes an even more important governance mechanism. The most important implication ... is that the microfinance board is very important. ... microfinance boards with larger proportions of unaffiliated directors achieve better results. Thus, independence of the microfinance board should be promoted (Hartarska, 2005:1640).

While this is important, it should be noted that affiliated board members have a differential impact on performance, due to the different emphasis on outreach and sustainability by various groups of stakeholders. Hartarska further shows, for example, that donor representatives improve depth of outreach - but worsen sustainability. Meanwhile clients represented on the board have better sustainability at the expense of depth of outreach (ibid: 1640-1641). Hartarska also presents evidence of the link between governance mechanisms and performance in microfinance. Some traditional governance mechanisms work for microfinance organisations; mechanisms such as independent boards may be appropriate in most cases.

This critique is challenged by other recent research (Counts, 2008) which suggests that the choice between helping the clients and making money for investors is a false one and that MFIs can have both impact and profit. This is because microfinance should actually be seen as a platform not a product. It relies on high volumes not high margins and uses limits of

private benefit, holistic performance standards, and third-party certification (Counts, 2008). The argument that when MFIs pursue their social impacts they sacrifice the short-term profits is, according to this perspective, misguided: maximum poverty reduction and long-term business considerations are not only consistent, but can also be reinforcing. Long-term viability of microfinance requires political and regulatory support, which can be won by MFIs if they protect consumers. Increased competition with other MFIs drives microfinance to be a high volume rather than high-margin business (ibid: 52).

Finally, there are problems with measuring microfinance and its impact. One recent study (Karlan, 2008) argues that although MFIs are meant to target driven, spirited entrepreneurs who seek opportunities to better themselves and their families, microfinance itself does not really cause these clients to rise out of poverty. It is the clients' ability to stitch together social networks, to capture certain markets, or to create new business—rather than receive a loan—that matters and may be what is behind their success. Karlan argues for the use of randomised control trials, allowing for the estimation of what would have happened had microfinance not existed. Karlan concludes that one main criticism of microfinance - that since MFIs charge high interest rates, borrowers suffer more from getting the loan than they would have from not getting it- does not stand up (2008). Even high-annual percentage rate microcredit loans help people more than they could have helped themselves without the loans (Karlan, 2008; Karlan and Zinman, 2005a; 2005b; 2007a; 2007b).

## 7 Policy implications

### 7.1 Key stakeholders

Achieving the objectives of microfinance in the EU (i.e. to also support firms' innovation and the innovativeness of the region) requires support from the business sector as well as from the public sector and government. The commercial interest from mainstream financial institutions in microfinance could be important here: perhaps there could be concerted activities from such bodies and related intermediaries (e.g. accountancy and other standards organisations) to demonstrate that microfinance can be seen as a body of transparent business practices that can be conducted on a sound and accountable footing. These and other businesses could also be encouraged to include support for MFI among the aims and applications of their much-trumpeted commitment to Corporate Social Responsibility (CSR). Bodies involved in promoting and developing guidelines for CSR – including Business Schools, social audit organisations, and bodies such as the European Association for Business in Society (EABIS) – can foster this.

Community development and NGO services can also play important roles in ensuring the positive development of microenterprises supported by microfinance. They may provide support such as working with volunteers (e.g. retired business managers from other regions or sectors), providing mentoring and basic infrastructure, etc. These nonfinancial services may be required to support microfinance in growing, reaching more clients, and supporting the innovation agenda. European initiatives in developing support for microfinance may be usefully extended to other parts of the world, and there may well be lessons from other regions that can also be transferred back to Europe.

Governments, as already indicated, have a critical role to play. Bodies such as the World Bank and IMF stress the need for sound policies and legal frameworks, as well as macroeconomic stability, in microfinance as well as in other financial affairs and economic development strategies. The attractiveness of microfinance to the private sector and NGOs can be reduced by interventions such as direct service provision and caps on interest rates. Until recently, governments generally believed that the generation of development finance - including credit programs for the disadvantaged – was largely their own responsibility. There has been much criticism of excessive and often ill-informed government intervention in social and economic affairs, though some of the neoconservative agenda here has been undermined by the exposure of the limits of private sector management in the current financial crisis. Along with this criticism, there has been much argument that a primary (and sometimes exclusive) role for government in development financing is inappropriate. Indeed, experience suggests that it can be highly political and politicised, so that resources are liable to be diverted away from those areas where there is greatest convergence of needs and opportunities.

Governments, then, should focus on ensuring that the basic economic, social, and physical infrastructure is in place to allow the industry to grow.

But they have a complicated role when it comes to microfinance. With microfinance becoming popular, governments are now again tempted to use savings banks, development banks, postal savings banks, and agricultural banks to promote their own microcredit schemes. Many governments have set up facilities that channel funds from multilateral agencies to MFIs. This can be quite complicated and there are few successful examples in microfinance. Successful organisations in microfinance tend to be built on the backs of successful MFIs - not the other way around.

Government can also fund MFIs (Curran, 2005), but it is widely agreed that government funding should not be the only resource. In general, the idea is that a multiplicity of sources will (a) be more resilient to shifts in policy or economic circumstances and (b) bring more transparency and a wider range of experience with monitoring and evaluation, making the system less likely to be cosy or even corrupted. MFIs should, then, also mobilise other resources like concessional loans, commercial and multilateral loans, term deposits, savings accounts and bond issues – these points apply especially to the more developed MFIs. The issue here is that concerns like cost, maturity, volume and continuity of access have to be taken into account in the MFIs' liability structure, in order to ensure growth and stability in its lending.

This is not at all to argue against government initiatives in this field; indeed, these could play a vital role in enhancing and dynamising MFI performance. The point is simply to caution against heavy-handed government action that might stifle initiatives emerging from NGOs of various kinds, and even from commercial financial institutions. Systematic analysis of what constitutes good practice, and where governments can contribute most positively, is required. If such analysis can take into account the role of microfinance in facilitating innovation, so much the better.

## **7.2 Regulation and supervision**

Governments can choose to support microfinance by means of regulatory frameworks that empower a wide range of financial actors to offer financial services to poor or small clients. Financial regulators can support microfinance through modifying their rules. In most cases, the level of microfinance development does not (yet) necessitate the licensing of separate financial institutions to serve small clients; but in some countries (including EU Member States), alternative institutional frameworks may be set up to allow organisations (NGOs, credit unions, community-based intermediaries) to obtain a license to offer deposit services to the general public and obtain funds<sup>36</sup>. The Microfinance

---

<sup>36</sup> See <http://www.microfinancegateway.org/content/article/detail/13655> For the European context, see the Expert Group report "The regulation of microcredit in Europe" at [http://ec.europa.eu/enterprise/entrepreneurship/financing/publications.htm#microcredit\\_regulation\\_2007](http://ec.europa.eu/enterprise/entrepreneurship/financing/publications.htm#microcredit_regulation_2007)

Gateway website suggests some ways in which regulators can work with microfinance, including cooperation on issues such as:

- modifying limits on usury, to allow appropriate levels of interest to be set for loans,
- enabling credit information clearinghouses to share information on defaulting borrowers, so as to limit their ability to go from one MFI to another,
- working with civil authorities to ensure that private loan contracts can be recognised by courts (especially in those transition economies that lack even basic legislative infrastructure),
- reporting requirements that will prepare MFIs to eventually become regulated.<sup>37</sup>

Financial regulators can also examine the laws and other related regulation that limit the ability of traditional banking institutions to offer microfinance schemes<sup>38</sup>. Banking regulators may need to look at the ways in which they would evaluate microloan portfolios within large banks.

In order to reach large numbers of clients, microfinance must eventually be institutionalised, in the sense that services will need to be licensed and supervised by a country's financial authorities. Licensed institutions can offer saving services to their clients, and increase their own equity capital by acquiring deposits. As outlined by the World Bank (CGAP, 2003), microfinance's differences from conventional banking mean that the banking laws and regulations in many countries need some adjustment to accommodate licensed microfinance. The set of rules applied to microfinance, and the systems of supervision that can enforce compliance with these rules, are unlikely to be precisely those put in place for other financial institutions and arrangements. Microfinance needs different treatment than normal banking primarily because microfinance assets consist of many small, uncollateralised (i.e. unguaranteed) loans.

Areas of regulation that typically require adjustment include unsecured lending limits, capital-adequacy ratios, rules for provisioning loan-losses, and minimum capital requirements (CGAP, 2003). Microfinance providers that take deposits need 'prudential' regulation, which protects their financial soundness to prevent them from losing depositors' money and further damaging confidence in the financial system (CGAP, 2003).

In the present financial crisis, where trust in financial bodies is at a low level – including among these bodies themselves<sup>39</sup> - this is particularly

---

<sup>37</sup> For a view of the European context of regulatory structures that impact on microfinance, see the Expert Group report, 2007, "The regulation of microcredit in Europe" at [http://ec.europa.eu/enterprise/entrepreneurship/financing/publications.htm#microcredit\\_regulation\\_2007](http://ec.europa.eu/enterprise/entrepreneurship/financing/publications.htm#microcredit_regulation_2007)

<sup>38</sup> This include limits on the percent of a loan portfolio that can be lent on an unsecured basis, limits on group guarantee mechanisms, reporting requirements, limits on branch office operations (scheduling and security), and requirements for the contents of loan files.

<sup>39</sup> At the time of writing, the level of lending from one bank to another is at a very low level, due to pervasive fears about the security of the assets of other banks. It should be noted, too, that at such a time of crisis various poor practices are exposed and scandals of varying intensity

important. But regulators will need considerable reassurance that they are not running further risks in enabling MFI expansion. Politicians will need to be convinced that microfinance is part of the solution to the financing problems of small firms, that have been exacerbated in the current crisis, so as to encourage regulators to support MFIs. The message that microfinance could support the sort of innovation that may be part of the answer to the structural problems that underlie the current crisis could be influential here, at least for policymakers that are not preoccupied with short-term damage limitation.

---

emerge: this makes regulators very wary about supporting new initiatives, as opposed to tightening the supervisory systems whose weakness have been revealed.

## 8 Conclusions

Microfinance is an important social innovation. It is playing a significant role in promoting social and economic development in many deprived areas and among many socially excluded groups. It is striking, however, that discussions of microfinance very rarely touch on the potential contribution that these instruments can make to the innovative activities of the clients of microfinance. Yet, there is wide awareness of the financial problems encountered by small firms, in particular, when it comes to their pursuing innovative products and processes. We must recognise that many innovation projects require extensive funding (both in terms of the timescale involved and the amount of money required). Furthermore, many small firms are not pursuing particularly innovative projects, and their needs for finance concern activities that simply maintain or grow established activities. In principle, though, microfinance appears to be highly applicable to some types of innovation financing issues encountered by small firms.

We would need more detail as to the specific nature of these issues; they are liable to vary considerably across regions, sectors, and types of enterprise. The Community Innovation Survey results could be explored in more depth so as to examine some of these details, but it only asks very basic questions about the barriers that are encountered – and it is debatable whether this sort of large-scale survey can really explicate innovation financing problems. In fact, it is quite possible that many small firms will only have articulated their needs to a limited extent: they may require detailed consultation so as to think through the ways in which finance inputs, of one kind or another, could contribute to innovation-related activities. Often several types of financing will be needed to facilitate a combination of related innovation activities. In-depth case study research is the obvious way to improving understanding here.

At this point, we can only speculate about what the main types of innovation-related activity that could benefit from microfinance are liable to be. It is likely that microfinance will be more relevant to incremental innovations and those that are less technologically demanding. (This does not rule out the scope for potentially significant developments in, especially, service and software innovation, and in innovation that can help to configure and add value to existing complex sociotechnical systems.) Microfinance can support diffusion, including smaller enterprises' acquisition and implementation of products and processes that are well-established in larger firms (and/or other sectors or regions). It may contribute to other innovation-related activities, for instance those connected with IPR and market development (including development of B2B markets). In many cases, it may be that the learning processes involved in engaging with MFIs – preparing business plans, establishing monitoring and reporting systems, instituting more formalised accounting regimes – will be as important to supporting innovation as will the provision of finance directly to enable innovation-related activities.

In conclusion, the role of microfinance in innovation is a topic whose time is due, in terms of needing further exploration and analysis. This means putting innovation forward as a rationale for microfinance services.

Innovation criteria should not displace other criteria used by MFIs: microfinance already helps promote extremely worthy developmental goals. But innovation needs to be mainstreamed in microfinance policy as in other policy areas, and in microfinance strategy as articulated by development agencies and financial institutions. Perhaps some case studies of how microfinance has contributed to innovation on the art of its clients would help raise the profile of this area. Finally, innovations that support MFIs should themselves be pursued: this means raising awareness of microfinance as a social innovation. Neither innovation nor microfinance are panaceas, but it is very likely that together they can contribute to resolving urgent problems that confront us today.

## References

- Armendáriz-de-Aghion, B. & J. Morduch (2005) *The Economics of Microfinance*, Cambridge, MA: The MIT Press.
- Baldwin, J.R., W. Chandler, D. Le & T. Papailiadis (1994) Strategies for Success. A Profile of Growing Small and Medium-sized Enterprises in Canada. *Catalogue No. 61-523. Analytical Studies Branch*. Ottawa: Statistics Canada.
- Baldwin, J.R. & J. Johnson (1995) Business Strategies in Innovative and Non-Innovative Firms in Canada. *Analytical Studies Research Paper Series 11F0019MIE1995073. Analytical Studies Branch*. Ottawa: Statistics Canada.
- Baron, J. (1993) The Small Business Technology Transfer (STTR) program: Converting Research Into Economic Strength. *Economic Development Review*, 11(4), 63-70.
- Bogan, V. (2008) Microfinance Institutions: Does Capital Structure Matter? : Available at SSRN: <http://ssrn.com/abstract=1144762>.
- Bond, S., D. Harhoff & J. van-Reenen (2003) Investment, R&D and Financial Constraints in Britain and Germany. London School of Economics: Centre for Economic Performance, Productivity and Innovation Programme, ISBN 0 530 1673 7.
- Brewer, E., H. Genay, W.E. Jackson & P. Worthington (1996) How Are Small Firms Financed? Evidence From Small Business Investment Companies. *Economic Perspectives*, 20(6), 2-18.
- Bugamelli, M., P. Pagano, F. Paterno, A.F. Pozzolo, S. Rossi & F. Schivardi (2003) Ingredients for The New Economy: How Much Does Finance Matter? *EFIC working paper 03-31*. Maastricht: The UN University Institute for New Technologies INTECH.
- Burns, T. & G. Stalker (1961) *The Management of Innovation*, London: Tavistock.
- Callaghan, I., H. Gonzalez, D. Maurice, C. Novak & M. Stanley (2007) Microfinance - On the Road to Capital Markets. *Journal of Applied Corporate Finance*, 19(1), 115-124.
- Canepa, A. & P. Stoneman (2002) Financial Constraints on Innovation: A European Cross Country Study. *EFIC working paper 03-11*. Maastricht: The UN University Institute for New Technologies INTECH.
- \_\_\_\_\_ (2008) Financial constraints to innovation in the UK: evidence from CIS2 and CIS3. *Oxford Economic Papers*, 60(4), 711-730.
- CGAP (2003) Helping to Improve Donor Effectiveness in Microfinance: Regulation and supervision of Microfinance. Report. *Donor Brief No. 12*. CGAP.
- Chiesa, V., P. Coughlan & C.A. Voss (1996) Development of a technical innovation audit. *Journal of Product Innovation Management*, 13, 105-136.
- Christen, R.P., R. Rosenberg & V. Jayadeva (2004) Financial institutions with a double-bottom line: implications for the future of microfinance. *CGAP Occasional Paper*. CGAP.
- Christensen, C.M. (1992) Exploring the limits of the technology S-curve, part 1: component technology. *Production and Operational Management*, 1, 334-357.

- Committee for Microfinancing (no date) Microfinancing as an instrument for stimulating entrepreneurship in the Netherlands. *Advice from the Committee for Microfinancing in the Netherlands to the State Secretary for Economic Affairs*. Committee for Microfinancing in the Netherlands.
- Coombs, R. & I. Miles (1999) Innovation, Measurement and Services: The New Problematique. *In* J.S. Metcalfe & I. Miles (Eds.) *Innovation Systems in the Service Economy: Measurement & Case Study Analysis*. 85-103. London: Kluwer Academic Publishers.
- Corsi, M., F. Botti, T. Rondinella & G. Zacchia (2006) Women and Microfinance in Mediterranean Countries. *Development* 49, 67–74.
- Cosh, A., A. Hughes, A. Bullock, X. Fu, R. Lester, I. Milner & Q. Yang (2005) Innovation Benchmarking: Europe and the US. *Presentation at CIS Users Group meeting, 15 July 2005*. Mimeo: Centre for Business Research, Cambridge University. Available at <http://www.berr.gov.uk/files/file11028.ppt>.
- Counts, A. (2008) Reimagining Microfinance. *Stanford Social Innovation Review*, Summer 2008, 46-53.
- Cull, R., A. Demirgüç-Kunt & J. Morduch (2005) *Contract design and microfinance performance: a global analysis*, World Bank, Washington, DC, and *Economic Journal* forthcoming, available at <http://www.rug.nl/ifs/files/webroot/dev/cds/microFinance/Cull%20et%20al.pdf>
- Curran, L. (2005) Financing microfinance loan portfolios. *Small Enterprise Development*, 16(1), 42-49.
- de Aghion, B.A. & J. Morduch (2000) " Microfinance Beyond Group Lending" *Economics of Transition*, vol 8 no 2 pp401-420
- Dunleavy, P. (2006) Achieving innovation in central government organisations. Report. N.A.O. (NAO) (Ed.) London: LSE's Public Policy Group.
- EC (2003a) The EC recommendation C No. 1422 of 6 May 2003. *Replacing (in 2005) the Commission Recommendation 96/280/EC (OJ L 107 of 30 April 1996)*. European Commission.
- \_\_\_\_\_ (2003b) Microcredit for small businesses and businesses creation: bridging a market gap. *Draft report from the Working Group on Microcredit by Mulfinger and Aguinaga*. Version 17 June 2003: DG Enterprise, available [http://europa.eu.int/comm/enterprise/entrepreneurship/financing/docs/microcredit\\_report\\_en.pdf](http://europa.eu.int/comm/enterprise/entrepreneurship/financing/docs/microcredit_report_en.pdf).
- \_\_\_\_\_ (2003c) Seventh report on SMEs. *Observatory on SMEs*. European Commission.
- \_\_\_\_\_ (2006) Monitoring Industrial Research: The Annual Digest of Industrial R&D 2006. *In* J. Butler, D. Cox, D. Gagliardi, J. Howells & Y. Nugroho (Eds.) European Commission: DG Research.
- \_\_\_\_\_ (2007) From exclusion to inclusion through microfinance - Critical issues. European Commission.
- Euractiv (2006a) EU's R&D expenditure still at impasse. 5 September.
- \_\_\_\_\_ (2006b) SMEs & access to R&D funding. 3 August, available at <http://www.euractiv.com/en/science/smes-access-rd-funding/article-143886>.

- Eurostat (2004) Innovation in Europe: Overview of the third Community Innovation Survey (CIS3). *Eurostat Research Unit (B5)*. Luxembourg: Office for Official Publications of the European Communities.
- Evers, J. (2007) Status of Microfinance in Western Europe. *EMN Issue Paper*. European Microfinance Network.
- Evers, J. & S. Lahn (2006) Promoting Microfinance: Policy Measures Needed. *Finance & The Common Good*, 25(47-53).
- Fagerberg, J. (2005) Innovation: A Guide to the Literature. In J. Fagerberg, R.R. Nelson & D.C. Mowery (Eds.) *The Oxford Handbook of Innovation*. 1-27. Oxford: Oxford University Press.
- Frambach, R.T. (1993) An Integrated Model of Organisational Adoption and Diffusion of Innovations. *European Journal of Marketing*, 27(5), 22-41.
- Freeman, C. & L. Soete (1997) *The Economics of Industrial Innovation*, London and Washington: Pinter.
- GEM (2006) Global Entrepreneurship Monitor - GEM 2006 Summary Results. Available at <http://www.gemconsortium.org/>
- Gonzalez, A. (2007) How Many Borrowers and Microfinance Institutions (MFIs) Exist? Report. *Microfinance Information Exchange (MIX)*. Washington, D.C.
- Halvorsen, T., J. Hauknes, I. Miles & R. Røste (2005) Innovation in the Public Sector. On the differences between public and private sector innovation. Report. *Publin Report No. D9*. Oslo: NIFU STEP.
- Hartarska, V. (2005) Governance and performance of microfinance institutions in Central and Eastern Europe and the Newly Independent States. *World Development*, 33(10), 1627-1643.
- Helms, B. (2006) *Access for All: Building Inclusive Financial Systems*, Washington: CGAP/World Bank.
- Henderson, R.M. & K.B. Clark (1990) Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly*, 35, 9-30.
- Herbig, P.A. (1994) *The innovation matrix: culture and structure prerequisites to innovation*, Westport, CT.: Quorum Books.
- Hoffman, K., P. Milady, J. Bessant & L. Perren (1998) Small firms, R&D, Technology and Innovation in the UK. A Literature Review. *Technovation*, 18, 39-55.
- Hogan, T. & E. Hutson (2005) Capital Structure in New Technology-Based Firms. Evidence from the Irish Software Sector. *Global Finance Journal*, 2005.
- Kanter, R. (1988) When a thousand flowers bloom: Structural, collective and social conditions for innovation in organisations. *Research in Organizational Behaviour*, 10, 169-211.
- Kaplan, S. (1999) Discontinuous innovation and the growth paradox. *Strategy & Leadership*, 27(2), 16-21.
- Karlan, D.S. (2008) Measuring Microfinance. *Stanford Social Innovation Review*, Summer 2008, 53.
- Karlan, D.S. & J. Zinman (2005a) Elasticities of Demand for Consumer Credit. *Yale University Economic Growth Center Discussion Paper No. 926*. Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=838406](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=838406).

- \_\_\_\_\_ (2005b) Observing Unobservables: Identifying Information Asymmetries with a Consumer Credit Field Experiment. *Yale University Economic Growth Center Discussion Paper No. 911, Center for Global Development Working Paper No. 109*. Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=725563](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=725563).
- \_\_\_\_\_ (2007a) Credit Elasticities in Less-Developed Economies: Implications for Microfinance. *CEPR Discussion Paper No. 6071*. Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=997352](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=997352).
- \_\_\_\_\_ (2007b) Expanding Credit Access: Using Randomized Supply Decisions to Estimate the Impacts. *CEPR Discussion Paper No. DP6407*. Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1133824](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1133824).
- Kay, J. (1993) *Foundations of Corporate Success: How Business Strategies Add Value*, Oxford: Oxford University Press.
- Koberg, C.S., D.R. Detienne & K.A. Heppard (2003) An empirical test of environmental, organizational, and process factors affecting incremental and radical innovation. *The Journal of High Technology Management Research*, 14(1), 21-45.
- Kyereboah-Coleman, A. (2007) The impact of capital structure on the performance of microfinance institutions. *The Journal of Risk Finance Incorporating Balance Sheet*, 8(1), 56-71.
- Ledgerwood, J. (2000) *Microfinance Handbook: an Institutional and Financial Perspective*, Washington DC: The World Bank.
- Metcalf, J.S. & I. Miles (Eds.) (1999) *Innovation Systems in the Service Economy: Measurement & Case Study Analysis*, London: Kluwer Academic Publishers.
- Meyer, A., G. Brooks & J. Goes (1990) Environmental jolts and industry revolution: organizational responses to discontinuous change. *Strategic Management Journal*, 11, 93-110.
- Miles, I. (2005) Innovation in Services. In J. Fagerberg, R.R. Nelson & D.C. Mowery (Eds.) *The Oxford Handbook of Innovation*. 433-458. Oxford: Oxford University Press
- Miles, I. & L. Green, (2008) *Hidden Innovation in the Creative Industries*. London, NESTA Research report HICI/13 available at: <http://www.nesta.org.uk/hidden-innovation-in-the-creative-industries/>
- Morduch, J. (2000) The microfinance shism. *World Development*, 26, 783-790.
- Mulfinger, A. & J.-F. Aguinaga (2003) Microcredit for small businesses and businesses creation: Bridging a market gap. *Report of the Working Group on Microcredit*. Draft rev. 17 June 2003: DG Enterprise.
- Myers, S.C. (2001) Capital Structure. *The Journal of Economic Perspectives*, 15(2), 81-102.
- Navajas, S., M. Schreiner, R. Meyer, C. Gonzalez-Vega & J. Rodriguez-Meza (2000) Microcredit and the poorest of the poor: theory and evidence from Bolivia. *World Development*, 28(2), 333-346.
- OECD (2005) The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual, Third Edition. In The Working Party of National Experts on Scientific and Technology Indicators (Ed.) Paris: OECD.

- Rivaud-Danset, D. (2001) The Financing of Innovation and the Venture Capital, The National Financial and Sectoral Systems. *ESSY TSER FP4 project (Sectoral Systems in Europe – Innovation, Competitiveness and Growth) ESSY Working Paper*. Mimeo: CREII: Université de Paris 13.
- Rogers, E.M. (2003) *Diffusion of Innovations*, New York, NY: Free Press. Fifth Edition.
- Rothwell, R., C. Freeman, A. Horsley, V. Jervis, A. Robertson & J. Crawford (1974) SAPPHO Updated. Project SAPPHO Phase II. *Research Policy*, 32, 58-291.
- Sau, L. (2007) New Pecking Order Financing for Innovative Firms. An Overview. *Working Paper n. 02/2007*. Università di Torino: Department of Economics.
- Schumpeter, J. (1934) *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.
- Sika, J.M. & B. Strasser (2000) Tontines in Kamerun: Verknüpfung traditioneller und semi-formeller Finanzierungssysteme. *E+Z Entwicklung und Zusammenarbeit*, 41(11), 316-318 (excerpt in English available at <http://www.inwent.org/E+Z/zeitschr/de101-4.htm>).
- Stiglitz, J. (1993) Endogenous growth and cycles. *NBER WP 4286*.
- Tether, B.S., I.J. Smith & A.T. Thwaites (1997) Smaller enterprises and innovation in the UK: The SPRU innovations database revisited. *Research Policy*, 26(1), 19-32.
- Tushman, M.L. & P. Anderson (1986) Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31, 439–465.
- Tushman, M.L., W.H. Newman & E. Romanelli (1986) Convergence and upheaval: managing the unsteady pace of organization evolution. *California Management Review*, 29(1), 29–44.
- Tushman, M.L. & E. Romanelli (1985) Organizational evolution: a metamorphosis model of convergence and reorientation. *In* L.L. Cummings & B.M. Staw (Eds.) *Research in Organizational Behavior* vol. 7. 171–222. Greenwich, CT: JAI Press.
- Viviani, D., M. Giorgino, T. Minola & M. Dellarossa (2008) Capital structure and innovation of SME's in European countries. *International Council for Small Business World Conference*. Canada: Halifax, Nova Scotia, 22-25 June 2008, available <http://www.smu.ca/events/icsb/proceedings/creaf4f.html>.
- Vigenina, D., & A. S. Kritiko (2004) The individual micro-lending contract: is it a better design than joint-liability?: Evidence from Georgia. *Economic Systems* 28 (2) 155-176
- von Pischke, J.D. (2003) The Evolution of Institutional Issues in Rural Finance: Outreach, Risk Management and Sustainability. Lead Theme Paper at *Paving the Way Forward for Rural Finance - An International Conference on Best Practices ...*, 2003 - available at: [http://www.microfinancegateway.org/files/19437\\_N\\_158.pdf](http://www.microfinancegateway.org/files/19437_N_158.pdf)
- Wejnert, B. (2002) Integrating Models of Diffusion of Innovations: A Conceptual Framework. *Annual Review of Sociology*, 28, 297-326.