Evaluation of the Public Funding Program „INVEST – Grant for Venture Capital“

English Short Version

Of the Project Report for the BMWi

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The results and interpretations are in the sole responsibility of the authors. The client has not influenced the drafting of the report.

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1 Task

In October 2015, the German Federal Ministry for Economic Affairs and Energy (BMWi) commissioned a consortium of the Centre for European Economic Research (ZEW), VDI Technology Centre and Creditreform Economic Research to perform an evaluation study on the INVEST program “Grant for Venture Capital” (“INVEST-Zuschuss für Wagniskapital”).

Many newly founded companies have considerable difficulties in financing the early stages on the market. Depending on the sector and the required investment it takes several months, if not several years, until a company is established on the market and realises sufficiently large revenues to cover the start-up costs and the costs of operating the business. This can provide an insurmountable barrier, in particular for founders who can bring no or very little capital to the new company or who have only few personal assets which can serve as collateral for loans.

The INVEST program for venture capital was started in May 2013 to mitigate these problems. The aim of this program is to support young innovative companies in financing their early stages by mobilising venture capital from business angels in Germany. For the investor, the support scheme involves a tax-free grant of 20% of the amount invested in a new company, up to a limit of 250,000 € per investment and € 1m per year and company. The administration of the program lies with the Federal Office of Economics and Export Control (BAFA).

This evaluation study aims to estimate the effects of the program on the private market for venture capital and to assess its importance for young companies seeking capital. In addition, the efficiency of the use of the resources in the program is evaluated. As a note: An evaluation so soon after the start of the program cannot determine its sustainability. The question of whether growth and innovations are actually induced by INVEST can only be answered eight to ten years after starting the program.

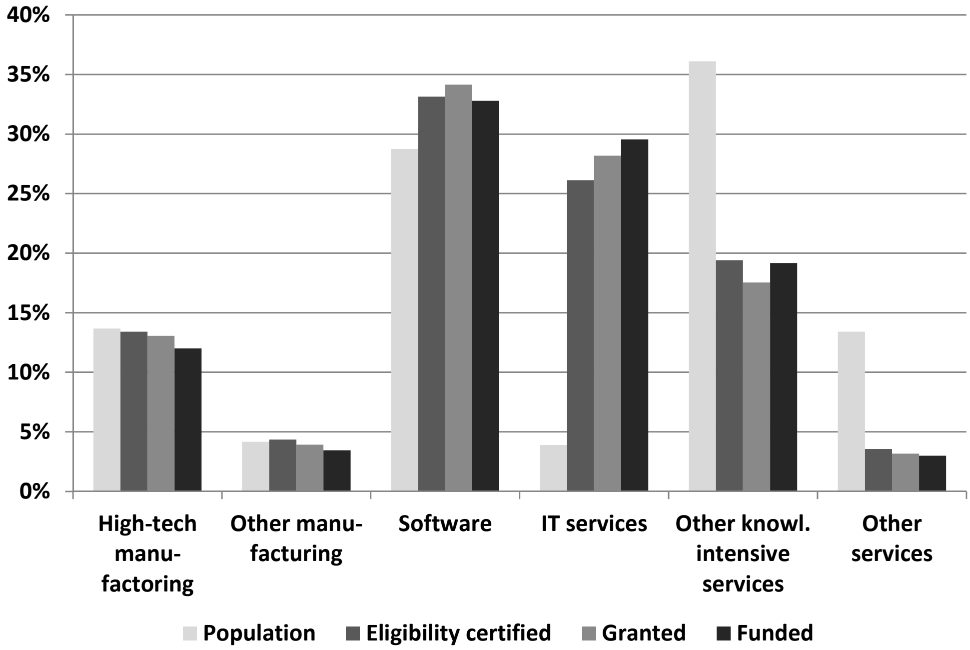
2 Results

2.1 The participants in the program

From May 2013 to mid-November 2015 2,073 applications of 1,654 investors were submitted for the INVEST grant, of which 1,253 (60%) were successful. Until the reference date (11.11.2015) the grant was paid out in 990 cases, which corresponds to 888 investors assisted by the grant. Almost a quarter of the investors is a Business Angel GmbH. 2,310 young companies submitted a request for certification of their eligibility for the program. In total, 1,951 companies participated in the programme, 1,515 (78%) of which were considered to be eligible by the granting authority, the Federal Office of Economics and Export Control (BAFA). 536 eligible young companies could find at least one investor who invested in the business and was granted the INVEST funding, which corresponds to a ratio of 35% of all companies with eligibility certificate. The 888 investors who received the grant before the reference date invested in 433 companies. Almost half of these companies could find at least two assisted investors.

More than half of the companies with an eligibility certificate provide software programming and other information and communication services (ICT) and are overrepresented in the INVEST programme. Berlin ICT start-ups are a focus of the INVEST promotion. Another result is that the majority of the companies which are supported through INVEST are in the early stages of their development. The total amount of investments supported by INVEST sums up to approximately € 104.3 million between the start of the programme in 2013 and the reference date 11.11.2015. The grants total to € 19.2 million.

Figure 1: Eligible companies by sector

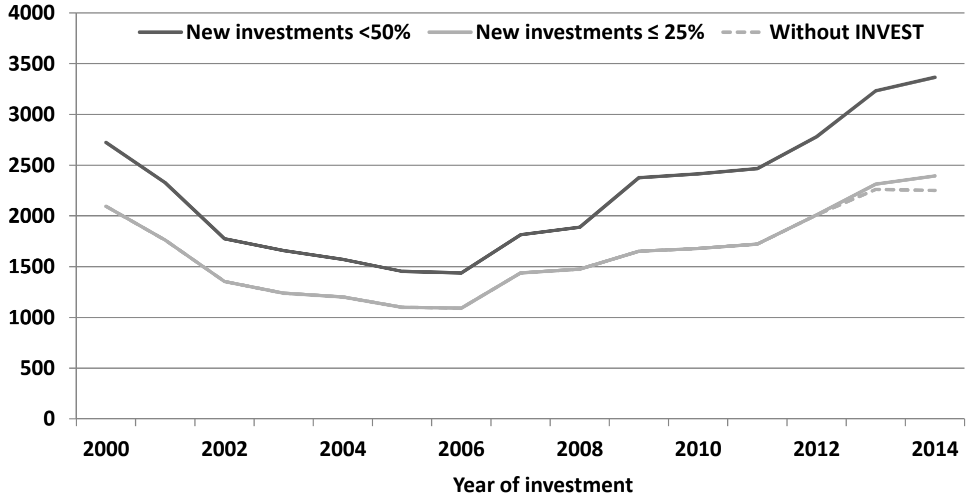


Source: Data on INVEST participants, BAFA; Mannheim Enterprise Panel, ZEW (authors' calculations).

2.2 The environment: The market for risk capital in Germany

When INVEST was launched in 2012, the market for risk capital in Germany was in an upswing. According to information from Zephyr and Majunke, two databases on financial transactions, the number of investments in young companies involving risk capital increases and the volume of risk capital expands since 2012/2013. The main reason for this rise is that non-typical risk capital investors enter the market. These are often private equity providers, corporate venture capitalists or investment companies which invest in companies because of low yields in traditional investment markets. They often act as co-investors of classic venture capital investors. In this way, the invested venture capital increases while the investment volume of classic venture capital providers remains low.

Figure 2: Number of new investments (equity holdings) in young, innovative companies



Source: Mannheim Enterprise Panel, ZEW (authors' calculations)

In the last decade, more investment capital has been made available for young companies. In addition, the involvement of business angels has increased more than proportionately: They are more often involved in financial transactions with young companies and their volume share has increased by several percentage points. Despite being in place for only a short period of time, INVEST has already resulted in the stimulation of the venture capital market, albeit to a small extent. 30% of the investors who were supported by INVEST invested in a new company for the first time. While the majority of these investors previously invested in established companies, others appeared as investor for the first time: 21% are so-called Virgin Angels. Much of these virgin angels follow a strategy of investing together with others in the young companies. It is therefore likely that they have been encouraged by experienced investors to take part in a financial transaction.

2.3 Literature survey

The importance of business angels

Business angels play an important role in financing companies, in particular in in early-stage of a firm's life. They are more flexible than other venture capitalists and offer - as business angels - often more intensive non-financial assistance to the company. At the same time, the investment sums are usually lower, so companies have to rely on other investors after the start-up phase. This follow-up financing is not always guaranteed.

Market failure exists

In the literature, there is evidence of market failure in markets for venture capital. In particular, information asymmetries are responsible for failures in these markets, but also phenomena such as ‘public goods’ and ‘externalities’ play important roles. Information asymmetries, both on the part of the companies and on the part of the investors, are more pronounced during the early phase of financing than in other financing phases.

Higher risks for market players reinforces the negative effects of asymmetric information and hence of market failure. According to the evaluators, INVEST provides an important contribution to reduce these negative effects by reducing the risks for investors. In addition, the signalling effect of INVEST and the prescribed minimum holding period can help reduce market failure.

The market for venture capital in Germany

Compared to other countries, in particular to the Anglo-Saxon countries, the German market for venture capital investments is still relatively young and less developed. In addition, business angel investments in Germany are comparatively low given the German economic performance. The lower level of development of the venture capital market tends to be associated with lower transparency and larger information asymmetries.

In the medium to long term an increasing growth and increasing importance of the venture capital market in Europe can be expected. The state will remain an important actor, since the various forms of market failures will persist. Measures which promote business angel investment such as INVEST can make an important contribution to the reduction of market failures and to closing the funding gap.

In this study, 23 policy measures for start-ups in Germany and other countries are discussed. Particularly common are governmental equity instruments and co-financing measures, but also incentives for equity investors through the fiscal system and different ways to stimulate the demand side such as strengthening the entrepreneurial culture, education programs, etc.

2.4 Implementation analysis

As part of the implementation analysis, a detailed examination of the application and execution process of INVEST was conducted. Overall, the implementation of the program by the granting authority and the project execution agency turned out to be little bureaucratic and efficient. Both investors and companies consider the red tape involved in the INVEST program to be low and the respondents were satisfied with the services of the BAFA.

The evaluators recommend that the visibility of the program should be improved. However, no clear ways of how to do this can be derived from the evaluation findings: Rather, it became clear that the program participants are a heterogeneous group who can be approached by very different marketing channels. In particular, for investors that are not organised in networks, no clear strategy can be deduced from the results, because, according to the evaluators, it is an extremely diverse group. Perhaps this target group, which does not participate in events of the business angels scene, could be reached via multipliers such as tax or financial advisors.

One question of the implementation analysis has been, whether the execution of the programme at the administrative level (here: administrative costs of BAFA) was efficient with regard to the use of resources (here: requested grants). It turned out that the share of costs for the administration spent by the granting authority in the total costs of the programme (here: requested grants) is 2.54%. From the perspective of the evaluators administrative costs and requested grants are in reasonable proportions so that the implementation of the programme can be regarded as economically.

2.5 Effects of the program on investors

The analysis on the effects of the program on investors are based on surveys of investors who have participated in the INVEST program and investors who did not apply for INVEST-funding so far. In addition, results of interviews conducted as part of this project with experts of the German venture capital market are included.

INVEST participants are usually not passive investors but business angels who are actively involved in the daily business of their young portfolio companies in addition to the investment. Investors funded through INVEST are engaged in official business angel networks to a larger proportion. The portfolio companies of funded investors are on average more often classified as growth oriented than those of non-subsidised investors. With the investments of funded investors larger risks are taken, but also higher returns are expected. This emphasises that INVEST has approached investors who invest "real" risk capital.

A major shortcoming of the INVEST program lies in that it is little known so far. Business angels, who participate in professional business angel networks, usually heart about the programme. However, non-organised investors apparently did not: Only 20% of the non-subsidised investors who took part in the online survey know the INVEST programme.

The additional venture capital induced by INVEST is provided in two ways: On the one hand, new investors, who had not invested in young companies so far, could be stimulated to do so. Through them, additional € 14.3 million were invested in young companies. On the other hand, many experienced investors have invested more equity capital. Based on the information provided by the investors in the online survey it could be calculated that 88% of total amount granted has been invested as additional equity capital in young, innovative companies.

The total net effect resulting from investments by virgin angels and experienced investors is positive: Each granted EURO induced an additional investment in young companies of 50 cent.

Table 1: Total effects of the INVEST programme

Additional capital provided by experienced investors induced by INVEST	14.487.000 €
Sum of granted funds to experienced investors	16.470.000 €
Sum of the net effects of experienced investors	-1.983.000 €
Share of sum net effects in sum of granted funds to experienced investors	**-12%**
Additional capital provided by virgin angels induced by INVEST	14.251.000 €
Sum of granted funds to virgin angels	2.708.000 €
Sum of net effects of virgin angels	11.544.000 €
Total additional capital provided induced by INVEST	28.738.000 €
Total sum of net effects	9.560.000 €
Share of sum net effects in sum total granted funds	**50%**

Source: Data on INVEST participants, BAFA; Investor Online-Survey, ZEW

The guidelines of the INVEST program and potential modifications have been extensively discussed in both the online survey and personal interviews with actors in the venture capital market. Overall, the policies are deemed appropriate and useful. The greatest impact on the amount of investment sums are probably to be expected from two extensions of the program, which are also considered in the white paper (“Eckpunktepapier”) of the federal government: a refund of the tax on capital gains and a grant for loss compensation. Some experts see the loss compensation critically as this would result in an excessive risk reduction. The tax exemption of capital gains, however, was assessed as positively.

Many of the actors of the venture capital market who were surveyed for this project are in favour of also subsiding subsequent investments in order to support uninterrupted financing of young companies in later growth phases.

2.6 Companies reached by INVEST

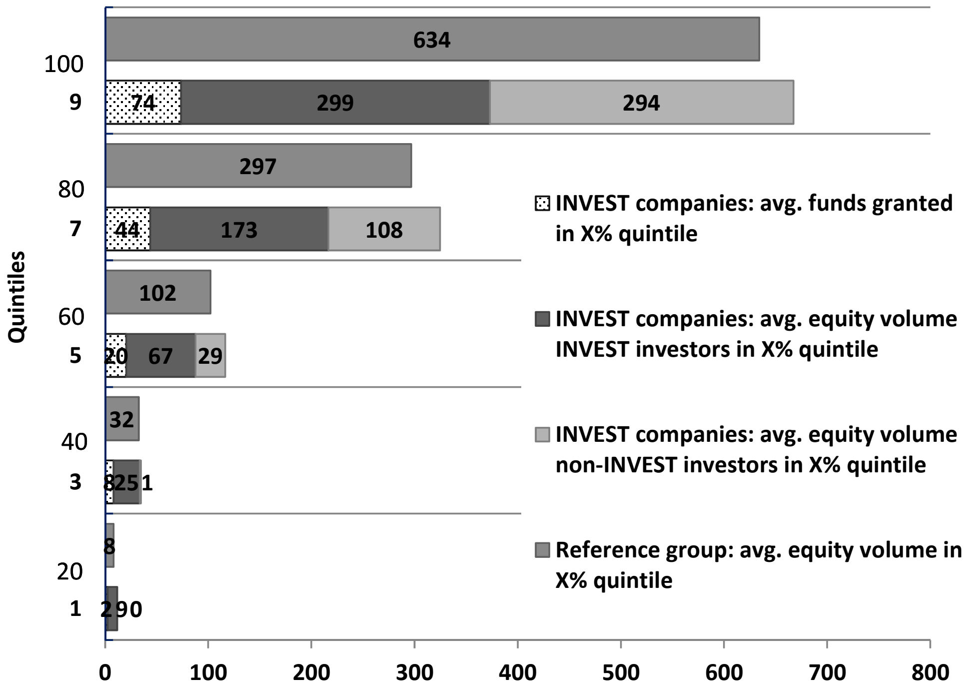
Important questions regarding the company reached by INVEST are: Which features do these companies have? What are their chances of obtaining equity capital? Does INVEST lead to that these companies can acquire larger amounts of equity capital? These questions are pursued by comparing the companies that are (at least indirectly) funded by INVEST with reference companies, where the group of reference companies is adapted depending on the specific question. The information is based on data that has been collected in telephone interviews with funded and non-funded companies. The question on the comparison of the investment volumes has been answered with a control group approach.

Among all companies that are eligible for the INVEST program, those that actually make an application, which is then successful, form a quite special group. The INVEST companies have, in comparison to a reference group, founders with a higher level of education. The start-up motives and the strategic objectives of these founders are stronger oriented towards growth than those of other innovative companies. Moreover, INVEST companies develop more frequently new techniques or products based on own R&D efforts than the reference companies. Given this combination of growth orientation and R&D activities, it is not surprising that the INVEST companies have a higher need of external funding and are more often financed by equity (excluding INVEST) than the reference companies.

This is also possible because the INVEST companies are significantly more likely to get equity financing, and actually get equity financing more often, than the reference companies due to their characteristics and conditions at start up. Thus, INVEST does not reach the companies that are (perhaps quite rightly) without a chance on the venture capital market, but rather the companies at the top of the "investment worthiness".

This is also reflected in the level of investments obtained; depending on the quintile INVEST companies receive on average between 5% and 13% more equity than the reference companies. This "advantage" is significantly larger in the lowest quintile. For companies that get up to two thousand Euros in total, the average investment sums in INVEST companies are 38% higher than those in the reference companies.

Figure 3: Average investment sums in 1.000 € by quintiles



Source: Mannheim Start-up Panel 2015, ZEW-Befragung der INVEST-Unternehmen, Teilnehmerdaten des INVEST-Förderprogramms, BAFA; Berechnungen des ZEW

In the lowest quintile, the difference in the average investment sums is also higher than the average amount of granted funds. This is not true in the other four quintiles. In these quintiles the average "advantage" of INVEST companies is less than the average amount of granted funds.

3 Assessment and conclusions

3.1 A relevant problem: The financing of the early stages of a company

In the economic and business literature on start-ups it is widely accepted that ensuring the financing of the start of a business is a significant problem for prospective founders. The start of a business reaches from the phase of the first serious transfer of a business idea into a concrete start-up project over the actual market entry and the establishment of the company in the market to the generation of revenues that cover at least the operating costs. If the founders – or their immediate personal environment – do not have sufficient funds or assets to hedge loans, then this financing hurdle is particularly hard to take. In general, this is independent of the quality of the start-up project, so that it is likely that even rewarding and conceptually promising business ideas fail to take this hurdle. Undercapitalisation is by far the most important reason why young companies close again.

This is particularly relevant for start-up projects based on an innovation, be it a new product, a new service, a new business model or a new method of producing goods and services. These start-ups have to go through a long research and development phase before their offerings are ready for the market. If it is a market novelty, then the estimated period for the market launch and the acceptance through the costumer is even longer. Ensuring early-stage financing is a very relevant problem for start-up projects and new companies, in particular if they pursue highly innovative business ideas. This is all the more so if the founders do not have enough own resources or collateral.

The INVEST program therefore addresses a significant problem that is widely recognised in the literature. It focuses on the financing restrictions and aims at generating equity investments in innovative (defined by the eligible sectors in the program) young companies. The significant improvement in financing opportunities for truly innovative start-ups would lead to a significant improvement in the growth potential of the population of young companies.

3.2 Intervention by the state justified: conditions for market failure

A very important reason for the strong reluctance of possible investors or venture capitalists lies in the high degree of uncertainty inherent in highly innovative start-up concepts that do not permit the calculation of risks with methods of financial mathematics. This makes the risk assessment very difficult for credit institutions as well as venture capital companies or funds. Therefore, they often refrain from financing the early stages of young high-tech companies. These objective uncertainties about the course of establishing start-up projects are accompanied by additional uncertainties for the potential actors that can lead to market failure (at least to the extent that a market equilibrium might not produce the welfare optimal allocation).

Innovations often have characteristics of so-called "public goods" or "external effects". This means that other market actors can benefit from the innovations as well without contributing to the development and roll out costs, be it that they can take over technologies, learn about possible solutions for specific problems, or develop the innovations further so that they can compete against the original innovator. Particularly relevant is the problem of asymmetric information between prospective investors and founders or entrepreneurs. The potential investors do not know the "true" options of the new company and its innovative project; the founders do not know the "true" objectives of the potential investor and his time horizon for the financing. This leads to an undersupply at excessively high prices or in this context: Truly rewarding investments are not made or the amounts invested are too low, the yield requirements on the side of the investors are too high – also because investors tend to be risk averse.

Thus, from an economic perspective government intervention in the market for venture capital for young companies is justified. INVEST addresses exactly the symptoms caused by market failure. The aim of INVEST is to increase the entire volume of venture capital offered to young companies. Through the subsidy the risk for investors is reduced and the return on the investment, if successful, is increased.

3.3 Important actors in early-stage financing: business angels

The financing of start-up projects, in particular, of innovative start-ups, is not particularly attractive for banks and for the formal venture capital market. They often have relevant fixed costs and need predictable investments that exceed a certain level for their risk portfolios. However, for young (and therefore often small) companies, including those from the high-tech sectors and knowledge intensive service sectors, it is often sufficient if they would get small sums.

For this phase of business development business angels are more relevant. Due to a limited number of investments they have significantly lower fixed costs than the formal providers and they are also often engaged in their portfolio companies as advisers and strategists. In addition, business angels invest on average considerably smaller amounts than do VC companies. Thus, they have the flexibility necessary for the early stages of company development that are less well predictable. However, a downside is that the investment horizons of business angels are often rather short and that they do not want to guarantee a follow-up financing which is particularly important for growth oriented companies.

These considerations are taken into account by INVEST as well. INVEST is targeted at business angels who invest in early stage companies (not older than ten years). The rules that are to be observed are appropriate to assure sufficient flexibility for very different concrete situations. Also, the minimum holding period of investment (at least three years) help to make the investments reliable for the reached companies.

3.4 INVEST and business angels: capital is mobilized

From the self-reported information of the funded investors collected by the survey it follows that the INVEST program caused a remarkable mobilisation effect. It can be assumed that about one fifth of the investors supported by INVEST so far– these are 220 persons, almost 90 per year – were stimulated by this funding opportunity to invest in a young company for the first time. These first-time investors have invested a total amount of € 14.25 million in young, innovative companies. In addition, experienced investors stated that they increased their investments compared to their original plans due to INVEST. Additional investments in start-up companies by experienced investors initiated by INVEST amount to € 14.49 million. These additional investments are however less than the total funding granted to these investors by INVEST, which amounts to € 16.47 million. Nevertheless, a quite significant proportion of 16% of their total investment (€ 90 million) is activated by the program for this investor group.

According to the evaluators, the overall effect of INVEST taking into account both groups of investors is positive. Every Euro from the programme triggered on average an additional 50 cent for investment, thus € 1.5 is additionally invested.

It can be expected that the investment volumes initiated by INVEST will be rising significantly. At the moment the INVEST program is not very well known. Responsible for this are certainly the to date relatively short duration of the program of two and a half years, but also the past marketing and advertising efforts play a role. If it is possible to increase the awareness of investors and potential portfolio companies for the program, than it is likely that INVEST initiates even larger risk capital investment.

3.5 Reached portfolio companies: very innovative companies

The effects of the programme on the investors only are not sufficient for a fully positive evaluation. It is, of course, also important that the envisaged target group of companies will actually be reached by INVEST, i.e. that just the innovative, growth-oriented companies have higher chances of getting risk capital.

The analyses show that INVEST reaches relatively accurately those companies via the support of the investors which are the intended target group according to the program concept. This is achieved without any audit or assessment of the business plan of the companies. To classify the companies as eligible for the program, only the sector affiliation, the company size and, if necessary, the existence of some innovation features are checked. The actual selection of the partner companies for the INVEST application is done by the investors. There is strong evidence that the investors apply their "normal" selection criteria for their portfolio companies. The achieved allocation is efficient with regard to the intention of the programme; the "market" selection mechanism has stood the test. Innovation and growth are at the top of the target list of the reached companies.

These characteristics of the INVEST companies make them significantly more likely to get equity financing than the reference companies. Thus, INVEST does not reach the companies that are (perhaps quite rightly) without a chance on the risk capital market, but rather the companies at the top of the "investment worthiness". However, this is not a drawback of the programme. As the above accounts show, the need for external financing is particularly high among the companies reached by INVEST. They actively seek for investors and often the initiative to apply for INVEST has been taken by the companies and not by the investors. This suggests that they are not "just so" able to get financing otherwise. Of course, from an economic perspective it is more desirable, if promising companies are equipped with more risk capital than companies that have low prospects of getting such financing due to their characteristics.

The difference in the achieved equity financing in favour of the assisted firms is in almost all volume size classes smaller than the amounts of funding granted by INVEST. Since the supported investors invest about 1.5 times of the funds granted this implies that the non-subsidised companies can partly compensate these “advantages” of the subsidised companies by acquiring non-subsidised equity investments – but only partly. There remains a significant positive difference in favour of the INVEST companies that those – according to reference group analysis – could not completely compensate with funds from the private venture capital market.

3.6 Implementation and design: some suggestions for improvement

According to the evaluators, some procedural changes may be useful in order to simplify the application process for investors and companies further. For example, the communication with the program participants can be simplified by opening up the possibility to hand in required documents in digital form. It may also be helpful to formulate the information material even more intelligible and to point more clearly to the exclusion conditions of the program. In particular, the latter caused some irritation of the applicants that are preventable.

To reduce the examination burden of BAFA, a replacement (or a decrease) of the detailed legal examination of the company contracts can be useful. Possible measures are – as elsewhere in the application procedure – declarations of honour by the parties with respect to the risk sharing.

There are also some improvements worth considering regarding the content design of the program, because through these the impact of the program could be increased. Other legal forms may be accepted, such as Business Angel UGs. Also, the tight specifications regarding the business purpose of Business Angel societies could be relaxed. The currently valid exclusion of follow-up investments as part of INVEST could be reconsidered as well. Since this can be quite useful for the development of innovative young companies, it is recommended to consider an adaptation of the program in this respect.

3.7 What next?

As the analysis show, INVEST can certainly be regarded as successful so far. When considering enhancements and concept changes, the actors should be aware of the determinants and conceptual causes of the positive effects in order to avoid making them ineffective through changes.

INVEST changes the expected return on investment for the funded (or eligible) investors (or lowers the expected loss). Through this investments become more rewarding. This holds for investments in relatively young companies (up to 10 years); for them there is a comparative advantage compared to investments in established companies through INVEST. This comparative advantage with respect to the returns for investing in young companies would be weakened, if investments in older companies are regarded as eligible as well. Established companies with corporate history act more in the area predictable risks and are therefore not as much affected by market failure as are innovative young high-tech companies. The effects of an extension of the program to older companies should therefore be examined critically.

INVEST activates risk capital from business angels. These are the "first addressee" when it comes to equity capital in the early stages of a companies' life. In many cases it is rather small investments that are needed to raise innovative start-up projects over the market threshold. The effects of INVEST are relatively largest for such investments. Improvements in this area are particularly important. It is recommend that changes in the programme do not lead to that the benefits from INVEST in this segment of young innovative firms compared to other areas are negated.

An important feature of INVEST is that the allocation of the subsidised investments to the concrete business is entirely up to the investment preferences of the funded investors. The analyses have clearly shown that this selection meets the objectives of the program to a very large extent. As it can be assumed that this selection mechanism is efficient in general, the current relatively tight industry restriction can be reconsidered. An expansion of potentially eligible companies from other sector promises significantly more advantages than disadvantages because of the anticipated innovation promoting effects.

INVEST can only unfold its full effect if it is more known and used more frequently. It is desirable if this challenge is accepted on the part of the program administrators. The current awareness requires activities according to the principle: think big, act big.