Comparing Different Promotional Instruments in the Ex-ante Assessment and Evaluation

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In this article a model is presented to compare a wide range of promotional instruments including Financial Instruments (FI) supported by the European Structural and Investment (ESI) Funds.

The model is based on three elements, which are already developed and widely used and brings the result together in one formula. The model is applicable e.g. to low-interest loans, quasi-equity and equity instruments, their respective grace periods (repayment-free years), extended tenors (maturities), indemnities, as well as to tax exemptions and grants. It also includes the special cases of revolving funds. In addition, the model can depict the administrative costs as well as the re-financing advantages where appropriate. It fulfills the special requirements for ex-ante assessment for financial instruments co-financed by ESI Funds in respect to value added, multiplier and leverage as required by the EU regulations for the 2014–2020 programming period.

The model is robust and easy to implement, and supplies funding recipients, funder and funding intermediaries such as development banks with the information they need for decision-making purposes.

I. Introduction

The new financial perspective 2014–2020 comes with some new approaches, such as a stronger emphasis on financial instruments (FI) and a more regulated approach on how to plan FI support schemes. The Financial Regulation (FR) from 2012 and its rules of application (RAP) establish a hierarchy of levels of support addressing thereby market failures or suboptimal investment situations. The support at regional level ranks first and is followed by the support at the national level. A FI at EU level is justified only, if it addresses the financing needs more appropriately. Nevertheless, the regional FIs include those supported by ESI Funds.¹

FIs in all sectors supported by EU budget shall be implemented only if a successful *ex-ante* evaluation is being carried out prior to their implementation. This evaluation should demonstrate that the chosen instrument is the most efficient to deliver the EU objectives. Thus, a comparison with other FIs or other potential FIs approaches is necessary to identify the most efficient way ahead.

This new approach as regards to FIs at the EU level has some general impact on national or regional developments as well. As part of the State aid modernisation framework Directorate-General for Competition (DG Compatition) had introduced an *ex-ante* or where appropriate *ex-post* evaluation of risk finance measures.

The new Guidelines on State aid to promote risk finance investments (Guidelines on Risk Finance) make an *ex-ante* assessment even a requirement for a notification: *"The risk finance measure must be established on the basis of an ex ante assessment demonstrating the existence of a funding gap affecting eligible undertakings in the targeted development stage, geographic area and, if applicable, economic sector."*² A similar approach

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¹ In the FR and RAP the ESI Funds are called CSF Funds (Article 224 of RAP in combination with Article 140 FR). See: European Commission, *Financial regulation applicable to the general budget of the Union and its rules of application* (March 2014: synoptic presentation).

Recital 64 of Communication from the Commission – Guidelines on State aid to promote risk finance investments (OJ C 19, 22/01/2014).

is required for fiscal measures such as tax-incentives for risk finance. The Guidelines on Risk Finance make further a direct link to the ESI Funds, stating that "where the risk finance measure is financed partially from the European Structural and Investment Funds, the Member State may submit the ex ante assessment prepared in accordance with Article 37(2) of the Common Provisions Regulation (CPR), which will be considered to meet the requirements set by these Guidelines."³

What are the concepts and the to-do lists of the *ex-ante* evaluation or assessment? The description of the concept differs a little bit across the different documents and develops with their date of publication.

The Common Provisions Regulation (CPR)⁴ provides the most detailed set of rules. Firstly, the CPR make a difference between *ex-ante* evaluations of programmes (Article 55), a rather high-level exercise, and *ex-ante* assessments of FIs (Article 37), which addresses a specific instrument of a programme and goes more into the details including the value added and the leverage of the FI. A common set of features in this regard is the check of the internal coherence of the envisaged activities, the quantification of impact and results as well as the comparison with and the check of the relationship with other activities in the same field.

But Article 37 is more specific, stating that the *ex-ante* assessment requires "an assessment of the added value of the financial instruments that are being considered for support from the ESI Funds, consistency with other forms of public intervention addressing the same market, possible State aid implications, the proportionality of the envisaged intervention and measures to minimise market distortion."

This article presents a model on how to consider and assess the value added of FI in a systematic and quantifiable way. **The model presented below is built upon three elements**. It is able to describe not only one single FI, but it also allows a systematic comparison of different FIs, as well as, within the same system, a comparison with grants, fiscal schemes, soft loans and guarantees subsidised by grants, and a combination of all these elements. Such a comparison may be helpful for different schemes aiming at the same or a similar objective. As such, the model brings all results together in one formula. The higher the result computed the better the performance of the promotional support scheme. The formula is composed out of three elements to be multiplied, the first describing the intensity of the promotional support and thus the monetary transfer in form of a present value, the second the multiplier between volume of the promotion and the investment volume and the third the target achievement and thus the accuracy to achieve the objectives.

The impact of support is described using a linear combination of business and impact-oriented parameters. This makes it possible to measure and compare the performance of various public sector promotion approaches and provides a rational basis for decisions on selecting the best FI – as required for the *ex-ante* assessment (see *Fiqure 1*).

II. A Standardised Quantification and Comparison of the Promotion Efficiency and Promotion Performance of Different Promotion Instruments: The Formula

In the following, the individual elements of this model are being described in detail.

In this context, it seems important for analyses to render the various promotion measures, namely

- Tax-related measures (tax concessions or exemptions);
- Grants;
- Subsidised loans or subsidised guarantees (which are considered as grants under the EU Financial Regulation if the rate of subsidy is *ex-ante* fixed for the tenor of the instruments); and
- Revolving financial instruments of the different kinds (loans, guarantees, quasi equity, equity)

as comparable and as much standardised as possible and to conceptualise them in conjunction with their financial leverage and funding impact. This supports

³ Recital 66 of Guidelines on Risk Finance (see Footnote 2).

⁴ Regulation (EU) No 1303/2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006 OJ L 347, 20/12/2013.

Model approach

Three elements that build on established approaches



Figure 1

Source: Adapted from PricewaterhouseCoopers (PwC) (Ed.) Trade & Finance - Winter 2013/2014 (January 2014) p. 5.

or in some cases actually enables rational decisionmaking. To achieve this aim, promotion efficiency is presented in a formula whereby it increases in line with the investment volume achieved by a given funding stimulus (subsidy element).

The value for promotion efficiency identified by the following equation is standardised and dimensionless. The funding volume (in \in) and the (dimensionless) funding multiplier are components of the formula. Promotion efficiency (PE) is converted to promotion performance (PP) by introducing performance against targets (PT), with a value of 1 assigned if all targets are met.

One advantage of the method applied here is that the individual funding product at micro-level (e.g., a promotional loan) inputs cumulatively into the promotion programme or group of promotion programmes at macro-level.

If

 Vol_{Inv} = investment volume triggered by the promotion programme

 PV_{norm} = present value of promotion (with a standardised value between 0 and 1, 1 corresponds to grant)

Vol_{Fnom} = nominal programme funding volume PT = performance against target (1 all targets met, 0 all targets missed)

PE_{norm} = promotion efficiency (standardised dimensionless value)

M = multiplier (nominal and effective)

PP_{norm} = promotion performance (standardised dimensionless figure),

it produces the following formulae combining all three elements resulting in the promotion performance:

$$\frac{1}{PV_{norm}} \cdot \frac{Vol_{Inv}}{Vol_{Fnom}} \cdot PT = PP \tag{1a}$$

The second element can be summarised as a dimensionless multiplier:

$$\frac{Vol_{Inv}}{Vol_{Fnom}} = M_{nom}$$
(1b)

The first and the second element can be summarised as a dimensionless value describing the quantitative efficiency of the promotion:

$$\frac{M_{nom}}{PV_{norm}} = PE \tag{1c}$$

Combined with the third element we come again to the comprehensive formula of (1a) expressed in a different form:

$$PE \cdot PT = PP \tag{1d}$$

Where there are multiple options, promotion efficiency (PE) appears to be the best criterion for selecting the most favourable instrument to maximise the investment achieved. The whole picture comes when in addition the performance against a target is taken into account.

Taking the following example (as illustrated in *Figure 2*):

- €2 billion in public funds are provided for an energy efficiency programme ;
- The intermediary funding institution deploys it as a grant element to reduce the interest rate, generating a total of €10 billion in long-maturity loans of 12 years tenor (credit period), so the present value of promotion (PV_{norm}) is 0,2;
- Since the loans cover 50 % of the planned investments, €20 billion of investments are triggered (Vol_{inv}) and
- 5 % of investments are not used for energy efficiency purposes (value based on experience from previous programmes), so the performance against target (PT) is 0,95.

The promotion performance (PP) is: $1/0.2 \cdot 2 \cdot 0.95 = 9.5$. The promotion efficiency (PE) is:

 $1/0.2 \cdot 20/10 = 10.$

The funding volume seen from the standpoint of the

state budget is:

0.2 • €10 billion = €2 billion.

As a result, each euro financed from taxpayers' money triggers ϵ_{10} of investment of which $\epsilon_{9.50}$ is in the targeted sectors. The promotion efficiency shows the 10ϵ and the promotion performance the investment in the targeted sectors.

III. The Combination of the Funding Elements at Present Value – The First Component of the Formula

1. Financial Instruments with Liquidity (Funded FIs)

The effective funding volume of a grant is equal (disregarding administration costs and applicant's fees) to the amount of funding. The subsidy value is 100%, so weighting with the present value of promotion produces 1.0. Present values of any other financial tool can in principle be used to identify the monetary advantage comparing against market instruments and their respective market values.

A linear (and thus simplified) model of present value calculation can be deployed usefully in promotion programmes in order to

- make different funding products and promotion programmes comparable, and
- analyse, develop or construct different components cumulatively within a promotion programme in a straightforward way.

Where support is provided in the form of loans, the "promotional loan" plays an important role. It has (i) a lower interest rate than comparable loans in the market or (ii) provides repayment-free years (grace period) or (iii) features longer maturities than are available in the market or (iv) contains guarantee components (risk transfer elements/underwriting) for third-party financing – to name just a few examples.

If cross-comparison – and, where necessary, cumulation – of the respective promotional components is required, one option is to use the present values of the promotional components as a reference. A typical value for each individual funding component can be identified and quantified using discounted cash flows from the market loan on the one hand and from the soft loan on the other hand. If we disregard



Illustrative example: Energy efficiency programme to reduce carbon emissions

Figure 2

Source: Adapted from PricewaterhouseCoopers (PwC) (Ed.) Trade & Finance - Winter 2013/2014 (January 2014) p. 9.

second-order effects and non-linear impacts combining different funding elements can be seen as the linear superimposition⁵ of the individual elements. By employing a uniform standard to quantify the funding elements, the method enables the funder and/or the development bank to achieve comparability and thus control of the programme. If required, new elements can be added or deleted relatively flexibly to reflect changes in funding objectives or the economic environment. The following examples present various financial instruments which can be offered separately or combined and reflect their present value of promotion depending on the scope of funding involved, their type and durability.

Example 1: Promotional interest rate

If base lending on the market attracts maturities of ten years with repayment in proportional instalments and an interest rate of 5 %, applying the maximum promotional component of a \circ % interest rate, loan produces a present value (PV) of promotion of 0.24 of the soft loan⁶, while a 2.5 % interest rate (i.e. half the base rate) produces a present value (PV) of promotion of 0.12. Some countries have low-interest funding programmes at support rates of 1 percentage point below market, which here corresponds to a present value (PV) of promotion of 0.05.

⁵ The breakdown of the promotional programme into the different components results in a simple addition of the respective present values. The order of composition and decomposition does not play a role in a linear or linearised model. Nonlinear effects such as higher Taylor polynomials are small and therefore neglected.

⁶ For each year the cash flow to pay the interest rate (i) in the market case and (ii) in the promotional case is considered. The difference gives the promotional element. The promotional value is calculated with discounting these differences to the presence.

Example 2: Grace periods

Normally, the market does not offer repayment-free years. These so-called grace periods can make repayment easier as the investment is supposed to create revenues. Particularly for new small and medium enterprises (SMEs) such grace periods are important, where returns only start to kick in around three years after a new company has been set up. Although in practice repayment-free years frequently go hand in hand with low-interest lending, their value of promotion can be determined in isolation using the proposed methodology since payment flows are deferred while loan maturity remains unchanged. A three-year grace period corresponds to a present value of promotion of 0.06 leaving the other parameters of Example 1 unchanged.

Example 3: Extension of maturity

Tenors (maturities) are frequently extended to offer funding recipients greater financial stability. This is particularly significant in countries where the local banking system does not offer long maturities, which makes it difficult to produce reliable investment calculations. The analysis shows that extending tenors generally involves a small funding component. In the example selected here, a three-year extension would lead to a subsidy value of 0.0145.

These examples illustrate the comparability of the various funding components and the optimisation possibilities with respect to the desired effect. To give an example for this kind of optimisation: Based on the assumptions made here, the combined promotional impact of extending a maturity by three years while simultaneously granting three repayment-free years has a present value of promotion of 0.07. Such subsidy intensity is roughly equivalent to an interest reduction of 1.5 percentage points if the loan structure remains unchanged. Whenever overall access to lending, particularly at longer maturities, is a bottleneck for SMEs, the funder would be able to marshal good arguments for proceeding with a combination of longer maturities and repaymentfree years, which puts less strain on the budget than reducing interest rates at the same value of promotion.

Revolving funds represent a special case as returns on loans or equity investments are re-used for new disbursements. If this applies continuously to returns on lending, the promotional present value (PV) of the programme increases considerably while the PV of the individual loan remains unchanged.

Example 4: Revolving promotional loans

As in the first example, we assume a loan with proportional repayment and with a o % interest rate. The repayments in the first year are re-granted in the second year and so on. The present value of promotion of the individual loan remains 0.24 but the funding volume increases due to the returns from the lending being redeployed. In an ideal funding policy case without defaults, all loans are repaid and, assuming repayments of 10 % per year, this means an additional disbursement of 10 % is made in all future years, which is equivalent to a constant annuity value that is twice the original volume.⁷ Structuring lending as a revolving fund therefore produces a triple promotional effect. The first 0.24 come with the first generation of lending and its present value of promotion, the further effect of 0.48 is twice as high and comes with recycling after the repayment. The total present value of promotion is summed up to 0.72.

2. Financial Instruments without Liquidity (Unfunded FIs)

There is a long tradition of unfunded products, particularly in the form of warranties and guarantees. This class of products requires liquidity only if liability is incurred and the guaranteed volume becomes due. The use of so-called first-demand guarantees is widespread and the simplest to model. In these cases, the guarantee comes into effect immediately once a default is triggered by covenants agreed upon in advance.

In the case of warranties, the value of promotion of the warranty is generally split on a basis that can be calculated approximately from the aggregated probability of default, taking into account both

⁷ The present value of perpetuity of 10% of the original loan volume V and a discount rate of 5% is 0.1V/0.05=2.0V. Looking at the promotional present value of this additional lending volume (in real terms) results in 0.48.

expected and unexpected losses over the warranty period. The practice has shown thus far that the value of promotion accrues partly to the borrower's bank (whose risk costs thus fall) and partly to the company receiving the funding (which thus pays lower interest). In warranties of federal states common in Germany ("Landesbürgschaften"), guarantors normally attempt to achieve a considerable reduction in interest. However, in most cases, a compromise is achieved whereby a considerable portion of the value of promotion is transferred to the borrower's bank. Here it should be kept in mind that (i) without a warranty the entire loan is at risk and (ii) these warranties are not first-demand guarantees and so the guarantor will not pay by a simple payment demand from the borrower's bank once a default occurs, but only once securities have been recovered and any proceeds from bankruptcy proceedings have been secured.

Where values of promotion are calculated based on the probability of default - as is typical in unfunded products such as these - the portfolio effect can also be taken into account in a more sophisticated version of the model. The risk of a well-diversified, granular portfolio is lower than the risk of an aggregated volume of the individual warranties. This creates a different added value for the funding from the client's perspective, for whom it remains unchanged, and from the funder's perspective, for whom the funding input may be reduced as a result of the funding institution assuming and/or managing the portfolio. Since the equation described above (chapter II, formulae 1a-d) views this from a performance side (client perspective), its values remain unchanged. The perspective of the funder can be described in another similar equation (which is beyond the scope of this article) showing the reduced budgetary spending in present value of promotion (PV) terms.

Example 5: Innovation loans

If the funder (e.g., a State) guarantees the promotional institution a specified portion of each individual loan as part of a lending programme, e.g., 50%, it will result in a total probability of default that can be aggregated based on the level of risk in each individual loan and the lending volume. If, however, the funder guarantees the funding institution the first 20% of a default on the total portfolio, this has the following effects: (i) The promotion programme may be diverted into lower risk range, depending on how the 'first loss piece' is evaluated; if there is a very low probability of the default exceeding 20 %, the portfolio may be rated AA or AAA by the funding bank; (ii) the funder may find itself in a situation where its total probable liability for losses is higher since it is 100% rather than 50% liable with respect to the first defaulting loans, but its liability is in turn limited to 20% of the total portfolio rather than 50%. In many cases, the 'first loss piece' can be selected so as to produce a situation that will be more advantageous for the state as well as the funding bank.

The key to ensuring comparability of the various funding elements lies in identifying the present value (PV) of promotion throughout the course of the promotion programme's life cycle. It should be identified when the promotion programme is planned and/or the individual funding measure is approved, and should adopt the perspective of the funding recipient, the end client.

IV. Identifying the Investment Multiplier at the Various Funding Levels – The Second Component of the Formula

The leverage effect of the promotion, or the investment multiplier it triggers, is a key criterion for deciding which funding instrument to select. Leverage levels are directly proportionate to support efficiency: The promotional efficiency (PE).

However, efficiency may change over time and depending on the location. In times of crisis, leverage effects will usually be lower than in phases of economic prosperity; nevertheless, funding may then be particularly crucial in triggering any investment at all. The tension between investment leverage and free-rider effects is factored into the measure described in chapter V, performance against targets. If leverage effects are set too high, this may mean that the incentive effect is only small and the proportion of projects with free-rider components increases.

'Leverage' is used often in a broad understanding. As the CPR has decided for a very precise and narrow definition, multiplier and leverage have a different meaning and form different subsets of the quantitative value added.

1. Determining the Quantitative Value Added

In recent years, development banks have made efforts to develop a more transparent and clear way to present promotion performance by using a multiplier calculation which is sometimes also termed 'leverage effect' or 'quantitative value added'.⁸ Three difficulties have to be addressed:

- Is the whole investment taken into account, or is the calculation based on the external financial component of the investment only?
- Are all public contributions taken into account to assess the public contribution and the element of public subsidy, or is the calculation based on the contribution of one public level only?
- Is the revolving in the future taken into account?

A careful approach to modelling is required here. If the EU, the national authorities and a region each award a 10% grant for funding innovation projects to the same portfolio of €100 million (at each level there is a budget of €10 million provided), and all three levels report that they have achieved a leverage effect of 10, this would suggest, that €270 million in additional private sector investment had been assigned for innovation projects, although the actual private sector contribution was only €70 million. As a matter of fact €30 million out of €100 million total investment was provided by public sources, the real multiplier being 3.3 instead of 10.

In order to increase comparability with grants, it is best to base the multiplier on the total investment in the project (in the case of project funding, this should include the equity provided by the project promoter) and not just the portions covered by the loan. Grant programmes are in many cases designed to contribute to or to replace an equity contribution otherwise expected by the promoter of the project. The multiplier is therefore better described by considering the total funding costs of the project.

In order to prevent double counting, therefore, the adopted perspective must be clear. Generally, the best option is to identify the multiplier for the end financial product. This refers to the perspective of the funding recipient/beneficiary and the whole investment volume, not the perspective of the individual contributing institutions and the external finance only. With this approach a quantitative value added can be defined and used in the model and the *ex-ante* assessment. A FI motivating final recipients to contribute significantly with own funds to investment can achieve a good value added, even if external finance was small or zero. With this approach the *ex-ante* assessment can fully analyse the facts needed for State aid notification or the exemptions of notification, as the contribution of other public sector parties are not neglected, but taken into account.

For cooperative financing by multiple funders in a multi-stage process, funding impacts should be aggregated on a linear basis. In practice, cooperation is more common on individual projects and tends not to involve entire promotion programmes. However, one of these rare cases is when Germany's development bank, the Kreditanstalt für Wiederaufbau (KfW), combines its promotional facilities with the advantage of an interest subsidy in a regional programme – and if applicable with a lower refinancing advantage of the respective regional promotional bank.

This quantitative value added is not anymore identical with the leverage.

2. Determining the Leverage

In respect to the leverage a discussion between different EU bodies took place during the preparation of the new financial perspective. In the Special Report 2/2012 on FIs for SMEs co-financed by ERDF, the Court of Auditors (CoA) developed a calculation scheme for leverage expressed as "Finance to final recipients divided by Public contributions". The Commission calculates leverage as "Finance to final recipients divided by EU contribution".⁹

If we compare it with what was already explained above, the CoA wants to avoid double counting of the activities of the different budgetary levels (or at the same level with different promotional programmes).

⁸ For example, the European Investment Bank (EIB) and the European Investment Fund (EIF) have developed a common methodology for identifying quantitative (and in some cases qualitative) parameters for the leverage effects. This is presented, for example, in EIF (ed.), *EIF Leverage Methodology* (January 2011, unpublished).

⁹ European Court of Auditors, Financial instruments for SMEs cofinanced by the European Regional Development Fund (Special Report, No 2/2012) p. 37.

The Commission wants to highlight the EU value added. Both EU institutions take the finance 'to' the recipients, but do not count the contributions of the recipients with internal finance.

In quantitative terms the results are the following:

- Leverage in this definition expresses other external finance to the recipient outside of the ESI Funds.
- If the FI is the same, but different co-financing percentages exist in different EU regions, the leverage is different; the leverage is higher where the EU co-financing rate is lower.
- If the investment is the same, but the contribution of the recipient is different, the leverage is different; the leverage is higher where the contribution of the recipient is smaller.

The leverage as defined in the Financial Regulation does not take into account revolving in the future. The CPR goes a little bit further looking at the 'long tail' of the FI after the eligibility period and recycling of repayments during the eligibility period, too. The CPR gives priority to the utilisation of repayments, interest revenues and gains within the eligibility period to cover the costs and expenditures for the approved and outstanding financial tools after the eligibility period. Additional expenditures for purposes of the FI are possible as well. Relevant for the leverage in the definition of the FR is additional expenditure during the eligibility period only.¹⁰

The leverage in the understanding of the Commission was defined in the Rules of Application of the Financial Regulation and forms a subset of the quantitative value added as described above. Thus, firstly the quantitative value added is calculated according to the model and used for the *ex-ante* assessment according to CPR Article 37 (2) (b), secondly the leverage forming a subset of the quantitative value added can be easily determined and used for the *exante* assessment according to Article 37 (2) (c).

3. Determining the Multiplier

For the financial perspective 2014 – 2020 the CPR uses a specific approach for guarantees. The Delegated Act¹¹ mentions a multiplier, but this multiplier is again not exactly the same as the leverage mentioned before or the quantitative value added. The Delegated Act takes into account the specific risk of unfunded FIs and asks for a 'prudent' *ex-ante* assessment to determine a multiplier ratio of money to cover losses in the future and the guaranteed volume of new loans or other financial tools such as equity. This multiplier does not include other financing to the final recipient.

In practical terms not only the expected loss has to be calculated, but the unexpected as well. And if a range of losses is considered a prudent approach takes not only a base scenario in consideration, but a more averse one, too. The quantitative value added can be obtained relatively easily in two steps. The first step is based on the ratio of nominal investment volume to the guaranteed or warranted volume of the underlying equity or loan products. The second step is calculated from the ratio of the budget set aside to cover losses divided by the guaranteed or warranted volume.

One measure used quite frequently in promotional transactions to limit the risk for the funder involves setting an upper limit on risk-taking within a portfolio. These products can, for example, be designed so that 50 % of an SME portfolio is guaranteed up to a limit of 10 % of the portfolio.

For the sake of simplicity, we take in the model the upper limit (or cap) for calculating the multiplier of 10. The multiplier will only increase if it is likely that the cap will not be reached. As defined by this model, it is then essential to identify the occurrence probability within the envisaged portfolio. If totalling the expected and unexpected risk including a prudent approach across all planned lending only produces a value of 5 %, it is likely that only half of the guarantee within the portfolio will be utilised. In this case, the multiplier would be 20 rather than 10. If the loan to the SMEs covers 50 % of the investment the result for the quantitative value added is twice as high as for the multiplier, i.e. 20 in the first case and 40 in

¹⁰ Article 44 (1) (a) of CPR (Footnote 4).

¹¹ Article 8 of Commission Delegated Regulation (EU) No 480/2014 of 3 March 2014 supplementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund OJ L 138, 13/05/2014.

the second case where the expected and unexpected risk is supposed to be 5%.

4. Revolving Funds

Particularly at the European level, revolving funds are gaining in importance in all major funding budgets, including regional, innovation and agriculture.¹² This goes hand in hand with the opening up of promotion with financial products (e.g., loans with and without interest subsidies, guarantees, mezzanine funding, private equity finance, conditionally repayable funding). To ensure that decisions are made on a rational basis, a suitable benchmark covering all these instruments is required.

The crucial factor here is how the revolving funding element can be quantified and thus made evident. Without this, funders will either be obliged to revert to a merely qualitative analysis or the use of interest-rate subsidies (paid as a grant element) to maximise leverage effect. Without a robust quantitative analysis of revolving effects for the quantitative value added soft-loans created by grants will practically always be prioritised over structuring them as a revolving loan. For this quantitative analysis 'value added in the future' is considered and in addition to the 'value added at present'. The present value approach is again useful here.

As explained above in Example 4, the effect of regranting is expressed in the form of future funding flows generated from the funding product itself which have no impact on the budget. These future funding flows must be expressed (in cash terms) as a proportion of the original funding volume of the promotional loan or of the promotion programme. This proportion then forms the quantitative value added generated from the formation of the revolving fund. In the example above 10% of the original lending volume V is repaid each year and recycled for new lending. The calculation of perpetuity of 0.1V with a discount rate of 0.05 (5%) results in 2.0 V. In addition with the original first lending of 1.0 V the total lending discounted to the present results in 3.0 V.

Divergent systems that generate unlimited funding volumes do not generally emerge. To some extent, default rates and administrative costs form natural limits. Funds with nominal growth can be important in practice. But they do not cause any difficulty. In most of these cases, the priority is to ensure the fund's actual intervention capacity and so to assume that growth will proceed roughly parallel to the inflation rate. Here the right targets are those set relative to the assumed long-term inflation rate or based on inflation-adjusted intervention capacity.

V. Recording Dispersal Losses, Freeriding Effects or Exceeding Targets – Performance Against Targets as Third Component of the Formula

An approach for so-called impact investing was recently developed to complement the Capital Asset Pricing Model (CAPM). This model is frequently used to calculate the financial return on investments in venture capital expected before the investment is activated.¹³ The model involves multiplying the result of the CAPM equation by a coefficient of 1 where expectations are met, less than 1 if expectations are only partially met, and more than 1 if they are exceeded.

For the approach described here, a coefficient between 0 and 1 is sufficient for planning promotion programmes and ongoing reporting, with 1 representing a promotion programme that is completely on target. The coefficient is reduced to take account of any free-riding effects, i.e., the proportion of cases where funding is taken up but which would also have occurred without the funding. The coefficient can also be reduced if the interests of the intermediaries involved do not wholly coincide with those of the funders. Finally, such a coefficient could also be understood as a factor representing the qualitative value added of a FI. It allows comparing with other FIs and other financial support schemes - and only the combination of all three elements, the qualitative one, the quantitative one and the needed intensity of subsidy delivers the final ranking. Therefore, a FI can be selected which has a lower coefficient in the planning phase than 1.

In an *ex-post* report, typically an evaluation, funding targets may be exceeded or not fully met.

¹² See, for example, the guidance document on financial instruments under the European Agricultural Fund for Rural Development (EAFRD) in the programming period 2014–2020 (draft version, July 2013).

¹³ Cf. Uli Grabenwarter, Heinrich Liechtenstein, In search of gamma – an unconventional perspective on Impact Investing, (IESE Business School, without date, published 2011).

The case of an over-performance could be reflected in a figure for the coefficient during evaluation that is greater than 1.

The following example serves as an illustration of the above:

- For residential new-build projects, the present value of promotion per planned new resident is a plausible target and would appear to be superior to other potential measures such as the number of residential units. New-build is the best path when the particular aim is to meet the residential needs of low-income households. Lending volume per person is identified at the programme planning stage. Projects which have higher funding requirements per resident are assigned a lower performance against target. The investment initiated in the two projects might be the same. For example, if the funding requirement is 20 % higher per future resident all other parameters being equal, the coefficient is reduced from 1.0 to 0.83.¹⁴
- If an *ex-post* analysis discovers that fewer (or more) persons than originally planned move into the housing, the coefficient is reduced or increased accordingly.
- If modernisation and CO_2 savings are set as a dual target, and both targets are set at the same weighting, for example, one target could be expected to be 85 % met and the other expected to be 95 % met, the coefficient would result to 0.9.

This performance coefficient must be specified when a reporting system on promotion performance is set up by the funder. Explicitly defining the target or targets is not always easy in practice, but enhances programme quality.

It can be useful to compare promotional funding as a budget support instrument against tax exemptions. In funding terms, tax concessions are equivalent to grant entitlements for the grant recipient. One feature of this instrument is that the administration or development bank cannot review performance against targets and so there is a risk of high dispersal/free-riding effects occurring. It is even possible that over-funding occurs. For example, tax measures designed to promote the construction of residential property following German unification led to high volumes being spent in Eastern Germany, despite there already being an over-supply.

The consideration of a performance against target measurement means de facto that the investment performance achieved by the funding is weighted. Investments that are 100% target-oriented produce a value of 1.0; investments with 10% losses from dispersal effect a value of 0.9. Free-riding effects and any amounts deducted from funding elements by intermediaries trigger deductions from the value 1.

VI. Inclusion of Administrative Costs

The promotion efficiency measure identified through equation described above (chapter II, formulea 1a-d) does not yet include administrative costs (AC). There are a number of different methods that can be used to reflect these. One intuitively plausible method is to subtract them from the present value assigned for the promotion programme, e.g. from the budget. The calculation proposed here is generated from the perspective of the funder, promotional bank or promotional agency. The direct economic effects of a promotion programme are the product of the present value (PV) of promotion for the client minus the administrative costs, which must be reimbursed to the development bank by the funder (where funding covers all costs) or be provided by the development bank itself in the case of in-house programmes. The equation therefore with:

'AC' for administrative costs,

'i' the discount rate of interest, and

't' the point of time (number of years) is:

$$PV_{gross} - \sum_{t} \frac{AC_{t}}{(1+i)^{t}} = PV_{net}$$
(2)

 PV_{norm} from equation (1a) is a gross value. It transforms into the net value with the deduction of the administrative costs for each year of the envisaged lifetime of the promotional programme.

The Delegated Act develops a slightly different method for the new financial perspective.¹⁵ The administrative costs are part of the gross budget intervention as described above, but no transformation in a present value (PV) takes place, when upper limits for aggregate amounts of management costs or fees are defined. If the discount rate is low and the

^{14 0.83 * 1.20 = 1.00}

¹⁵ Article 13 (3) of the Delegated Act (Footnote 11).

Illustrative example: Energy efficiency programme to reduce carbon emissions including administrative cost and refinancing advantage



Figure 3 Source: PricewaterhouseCoopers (PwC) (Ed.) Trade & Finance - Winter 2013/2014 (January 2014) p. 19.

time horizon under consideration is short, the result will not differ very much from the more precise calculation of the equation above. However, when the administrative costs of the FI's 'long tail' after the financial perspective are considered, the present value (PV) determines the budget to be set aside.¹⁶

The more systematic approach is certainly to go always with the discounted costs. As the stream of costs is not always uniformly distributed the comparison between different FI is more reliable.

With reference to *Figure 2*, the illustration can now be expanded as presented in the *Figure 3*.

The practical difficulties encountered here are that administrative costs are (or at least can be) incurred over the whole term of the financial product. In the case of loans, a distinction should be made between the following:

 Administrative costs during the application process (which are incurred shortly before or during the approval and disbursement, usually therefore at time t=o);

- Management costs of the stock of credits;
- Costs of dealing with problem cases (non-performing loans, but in an earlier stage watch-list cases as well);
- Costs incurred at the end of the funding process (if necessary with a final report involving the funding recipient).

The costs and revenues related to dealing with problem cases could be included in the risk margins and should not be considered as administrative costs.

¹⁶ See Article 14 (1) of the Delegated Act (Footnote 9): "Capitalised management costs and fees to be reimbursed as eligible expenditure in accordance with Article 42(2) of Regulation (EU) No 1303/2013 shall be calculated at the end of the eligibility period as the total of discounted management costs and fees to be paid after the eligibility period..."

In the case of a revolving fund, the situation may be more straightforward in some cases. If the fund achieves equilibrium – or is close to equilibrium – after start-up period, administrative costs for one reporting year can be applied as representative of all costs incurred in future. In this case, it is sufficient to apply the total of administrative costs over one year.

In funding practice, administrative costs vary significantly across the different promotion programmes. There is frequently tension between standardising a programme, which reduces administrative costs, and individually approving promotional measures, which ensures more precise targeting but incurs high administrative costs. The formulae (1a–d) and (2) can be used to form a basis for a decision to help select the better solution.

VII. Conclusion

The method presented here can be used for a broad range of support schemes, including further groups of FIs inside or outside the ESI Funds, e.g. export credit, loan-funds, mezzanine-, guarantee- or equity funds. It is capable to show the effect of different funding sources for one promotional product. In the same vein it can be used to calculate *ex-ante* the contribution of an intermediary to the promotional programme in form of refinancing advantages. This is hinted in figure 3 where the promotional value is broken down into different funding sources (PV element 1 and 2).

A specific strength of the method is the employment of the formula for the different perspectives of the final recipient, of the funder and of the intermediary.