Reflections on profits, risks, their aggregation and pricing based on experience with the use of financial instruments for the private sector in the Western Balkans

Massimo Cingolani (*) - Venezia 23-24 settembre 2021

Criteria are discussed for assessing financial instruments for the development of the private sector in high-risk policy environments. The text draws on some of the results of a study on the *Prospective analysis of the SME sector in the Western Balkans*.

In high-risk environments such as those prevailing in the Western Balkans and in other areas of EU external policy, it is very likely that market failures will arise. Market failure is an event complementary to the optimality of pure competitive markets and covers a wide range of situations in which "first best" conditions such as the law of the single price, the equality between price and marginal cost and the separation between allocation and distribution do not apply.

From second-best theory, one knows that when there is more than one distortion, eliminating it will not necessarily improve welfare. In such conditions, allocation is also not independent from distribution. Therefore, financial instruments used in high-risk contexts should be evaluated also in terms of their distributional effects. Moreover, there are reasons to think that the market failure arising from high-risk is likely to have a macroeconomic character, which implies that distributional issues should also be examined in macroeconomic terms.

The main provisional conclusion is that one can use the differentials in country macro risk premia as a proxy for quantifying the market failure faced by the private sector. The usual microeconomic cost-benefit criteria of the expected change in consumption brought by a public intervention remains relevant, but it should be weighted by suitable accounting prices.

(*) Opinions expressed are personal

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Introduction and background

De Finetti ([1970, 1975] 2017) defined the probability of an event as the amount that one would be prepared to bet on its occurrence. This immediately establishes a parallel between risk and monetary values.

Indeed, an established economic tradition explains profit as the monetary remuneration for taking risk (Perroux, 1925; Knight, 1921) and this idea has been integrated in the general equilibrium model (Arrow, 1953), although, the well-known difficulties in integrating non-neutral money in general equilibrium limit the possibilities to interpret this remuneration as being really "monetary" (Hahn, 1965).

Working on the same assumptions of methodological individualism as the general equilibrium theory, and assuming the existence of money without really explaining it, modern finance develops a theory of the "fair pricing" of financial assets based on the "no arbitrage" assumption. This approach prescribes that financial assets be priced in such a way as making impossible those bets that would win with certainty in all cases. "Fair pricing", which is a notion originating in the probability literature, is thus an analogue of the "zero-profit condition" of deterministic neoclassical equilibrium (Eatwell, 1987), in which, no "undue" or "extra-" profit can be realized (see for instance Duffie, 1991 for the correspondence between modern finance and general equilibrium).

But whereas in the case of certainty, a theory of the "second best" developed addressing more realistic real-life situations in which market prices depart from the market clearing ones (where positive prices depart from normative ones), there seems to be no analogue literature that could be applied in a similar manner when financial asset prices deviate from actuarially fair pricing. Indeed, it is commonly assumed that observed financial asset prices reflect all available information (i.e. positive prices coincide with normative ones), in line with the hypothesis of market efficiency (Fama, 1970 and 1991).

In principle, nothing prevents to apply the apparatus of cost benefit analysis also to the case of uncertainty, as one could imagine calculating an accounting price of risk that would depart from the market price and that could be used for assessing for instance the effect of financial instruments from a social viewpoint.

However, on a closer look, the notion of the price of risk is much less obvious than what one would expect, because risk is a relative or conditional concept that does not refer to an absolute value such as that of a specific physical good or service. Probability, as a measure of risk or of its perception, depends on the state of information and cannot be defined in the absence of an exhaustive partition of the space of possible events. Only with reference to such a partition can a notion of simple or compound risk be discussed. Because this partition is made at a specific point in time, a concept such as "marginal risk", that would naturally be equated to price in a situation of equilibrium, is far from being straightforward, except possibly in cases in which probability coincides with a stable concept of frequency.

Moreover, in general, one should expect a number of market failures to arise when the presence of risk and uncertainty is pervasive and this is likely to be the case in the

development context, in particular for the countries targeted by the external policies of the EU and of its Member States. This conclusion builds on the experience accumulated in several years of lending practice in the Western Balkans and other transition and accession countries. On the same basis, some thoughts are offered below on how risk and uncertainty could be at least partially integrated in a rational framework for the analysis of development policy instruments and their impact, particularly for what concern the financial sector.

In the first section below, the idea is developed that in the presence of high uncertainty market failures are very likely and that these have analytical implications relevant for the choice of policy instruments and the analysis of their welfare impact. The following section discusses the issue of aggregation of risks in highly uncertain environments based on a simple but relevant example. It suggests that country risk premia are a first possible proxy to measure the "level" of risk and the related market failure in a specific real policy environment. They could thus be taken as a reference for the (public) compensation that could be envisaged to overcome private risk-related market failures in a certain market context. The third section presents the country risk premia for the Western Balkans. The fourth section looks at some of the results of a recent research carried out on the SMEs of the Western Balkans, which shows that there are several indications that the economic environment in this region is very risky for reason that are largely independent from the local SMEs. The fifth section looks at the specific financial instruments that have been developed by international multilateral cooperation since 2011-2012 in the context of the *Western Balkans Enterprise Development and Innovation Facility* to support the private sector development in the Western Balkans. The last section offers some tentative conclusions on what criteria should be used in evaluating such instruments from the welfare viewpoint in the light on the considerations made in the previous sections on the likely impact of risks and uncertainty for development policies.

Uncertainty and market failure

In general, very high risks do not allow markets to work smoothly. In very risky contexts, it is very likely that capital markets will fail to provide a homogenous pricing for the risk of a single investor or of its investment project and this is likely in turn to further increase risk premia (Jouini, 2019). Uncertainty could potentially be so wide that it does not allow the existence of a single price at all because probabilistic calculus does simply not apply (Casellina & Pandolfo, 2018).

Risk in itself can thus be the cause of a market failure when it prevents to define a single homogenous price as the focal equilibrium point at which the markets clear, a situation that Guesnerie (2013) has described as an expectational market failure.

Beyond risk, in general market failures arise when markets operate outside of competitive conditions. Traditionally there are two equivalent ways to define a purely competitive situation: one is the absence of extra-profits above the "normal" remuneration of capital, the other is the absence of barriers to entry in the market. Both definitions imply in principle that, in a particular market, a single price would prevail under pure competition. From the logical viewpoint the following conditions, which characterize "first-best" are essentially equivalent:

- Absence of market failure
- Price= marginal cost
- No barriers to entry
- Law of one price

When first best conditions are insured, maximum efficiency also prevails, which means that all available economic resources are used in the most efficient manner.

A contrario, apart from special cases, one should expect that market failures would prevent the so-called *law of one price* to hold, particularly in the development context. Different prices would be defined for the same product, for instance depending on sector or location, and the same would happen for the associated profit rates. In such cases, one can say that there is a "market failure" and one thus enters the field of "second-best". This situation can be expected to be endemic in a development context.

It is useful to remind two important analytical results that hold in the presence of market failures.

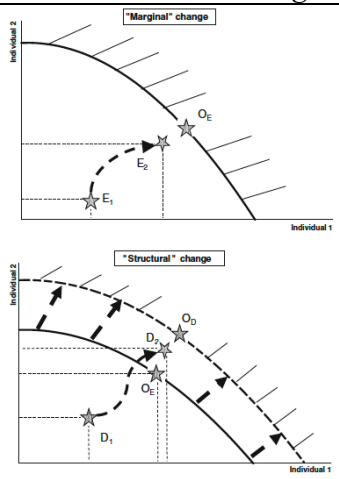
Second best: If more than one market failure is present, there is no reason to think that by eliminating that particular market failure the conditions for the optimum would be re-established. This is the standard second-best theorem in the original formulation made by Lipsey and Lancaster (1966).

Trade-offs (absence of independence) between allocation and distribution: Out of competitive conditions it is not possible anymore to separate allocation from distribution. The argument: "increase the cake first and then distribute it" does not hold. One must redistribute the cake in order to increase it. The reason is easy to understand when one thinks that in a competitive situation market prices ensure maximum efficiency. This means that all opportunities to produce more with the existing resources have already been exploited. If therefore one changes distribution along the maximum efficiency production frontier, this does not improve allocation (which is already maximal by the definition of competitive equilibrium). On the contrary when one moves out maximum efficiency (out and thus "below" neoclassical equilibrium), it is possible, and actually very likely, that a change in distribution would be associated with a gain or loss in allocation terms, in other words that the economy would move closer or farther from its production possibility frontier. This consequence of market failure is not very frequently emphasized, although it is clearly implicit for instance in the treatment of public finance made by Samuelson (1955, 1956) or in the presentation of the cost-benefit analysis in the tradition of Allais' *rendement social* made by Lesourne (1975). The question is illustrated graphically in Figure 1.

Figure 1 also helps understanding the concept of macro-economic market failure through the impacts on distribution. With reference to the dynamic considerations implicit in the second chart of Figure 1, one can argue that a small investment project would have a marginal impact on the economy and would therefore not modify its technology, implicit in the production possibility frontier, whereas an organic policy (or a very large investment) can bring a structural change and move the technology-possibility frontier.

This means that market failure should be discussed from a systemic viewpoint, as it can have a macroeconomic dimension whenever the policy action modifies substantially the technology of the economy, as it would be the case for instance for an overall agreed policy framework. Moreover, Figures 1 point to the need to look at the impact of any instrument proposed on distribution, as in general, out of equilibrium (i.e., in real life) the impact of an instrument on distribution cannot be considered to be independent from its impact on allocation.

Figure 1: Allocation and distribution: the case of a marginal versus a structural change

Marginal and structural change	*Comments*
	• If in equilibrium the conditions of maximum efficiency prevail, the economy finds itself on the utility possibility frontier. In any of the points on the frontier, for instance the one noted O_E in the first chart, any change can at best achieve the same level of utility prevailing before the change. In the real world an economy rarely reaches the ideal equilibrium conditions of maximum efficiency (for instance at O_E, or on any other point on the frontier, profits are stable at zero). • Suppose the real economy is in E_1, below the frontier. The distance from the frontier is a measure of inefficiency. It is not easy to calculate this distance in practice, notably because it is not obvious to define it from the theoretical point of view (Allais, [1981] 1989; see also discussion in "The Conceptual Framework" of Cingolani, 2009). Nonetheless it can be considered in abstract terms and a marginal project changes it, moving the economy from E_1 to say E_2. In this case, the project is profitable although E_2 is not on the frontier. E_2 is better than E_1 because both individuals consume more. Nothing changes on the utility possibility set of the economy. • A project entailing a structural change can impact on the utility possibility set and can move it outwards. Suppose that after the project the economy moves from the (sub-optimal) equilibrium D_1 to the (sub-optimal) equilibrium D_2. Again the project is profitable, because D_2 is better than D_1. D_2 is also better than O_E, although "sub-optimal" with respect to O_D.

Source: extracted from Cingolani (2010), p. 540.

The total probability theorem, aggregate risk and risk diversification

Total Probability theorem: Let us assume that risk is an objective concept, like for example in the case when probability coincides or tends to an objectively measurable frequency. In that case it makes sense to talk about an "objective value" of probability and this value could possibly be the object of market transactions in which it would be associated to a single market price that would be by assumption unique. For example, in the case of credit, one talks often of the "risk premium" attached to a particular borrower, which could be a company, or a collectivity like a government, but could also be a single borrower, like for instance in a mortgage or an investment loan. In these cases, the risk premium is treated as an objective and single price that his attached to the signature of that borrower.

In general, this price is in fact an expected cost that one side of the transaction, generally the side demanding liquidity or funding, must pay to the other. The price of risk is then what the borrower pays to cover the lender for the possibility that at some point of time during the life of the loan he may default on one of his payments. In principle this risk can be measured objectively as the aggregate probability of a loss for the lender on any of the borrower's repayments foreseen by the contract. The actuarially fair price of this aggregate price is the main component of the objective notion the price of this risk.

Assuming such an objective probability notion, let's consider the aggregate risk of two risky events E_1 and E_2. For instance, in the case of E1, the event could be a profit that may come

from a positive shock on demand and in the case of E2, it could be a loss due to an increase in environmental mitigation costs.

In the most general case, which is the one in which the two events are compatible[2], the probability of their logical sum is given by the sum of the probabilities of the two events taken separately, less the probability of the two events taking place together:

$$P(E_1 \cup E_2) = P(E_1) + P(E_2) - P(E_1 \cap E_2) \quad (1)$$

This well-known formula, which illustrates the theorem of total probabilities for the case of two compatible events subtracts the probability of the intersection of the two events from the sum of the probabilities of the two events taken separately because otherwise the probability of the joint event E1^E2 would be counted twice.

In general, for the case of n compatible events, the theorem can be expressed as stating that the probability of the event which is the logical sum of the n events is always lower than the sum of the probabilities of the events taken separately (de Finetti, [1970] 2017, p. 85; Levy [1925] 2006, p.6). Exploiting the properties of probabilities and Boolean logic when all the probabilities of the possible combinations of the n compatible events E1,…En are known, the probability of the event sum is a sum of the products of the probabilities of single events taken one by one, less the sum of the events taken two by two plus the sum of the events taken k by k etc., in such a way that (de Finetti, 2017, p.85; Daboni, 1967, p. 43):

$$P\left(\bigcup_{k=1}^{n} E_K\right) = \sim \prod_{k=1}^{n} P\left(\widetilde{E_k}\right) = 1 - \prod_{k=1}^{n}(1 - P[E_k]) = \sum_{k=1}^{n} P(E_k)$$
$$- \sum_{j>k=1}^{n} P\left(E_k E_j\right) + \sum_{h>j>k=1}^{n} P\left(E_k E_j E_h\right)$$
$$+ (-1)^{n+1} \sum_{n-1>\cdots>h>j>k=1}^{n} P\left(E_k E_j E_h \ldots E_{n-1}\right) + (-1)^{n+1} P\left(E_k E_j E_h \ldots E_n\right)$$

The formula can be read as saying that the probability of the event sum of n compatible events is made of two terms: the sum of the probabilities of the events taken separately that could be labelled ASR for Aggregate Specific Risk, which would be equal to the total probability of all events if the events were not compatible[3], plus a term that reflects all the possible combinations of the intersections of these in fact compatible events. Calling this latter term AJR, for Aggregate Joint Risks, one can write:

$$P(E) = P(\bigcup_{k=1}^{n} E_k) = \sum_{k=1}^{n} P(E_k) + (-1)^{n+1} \sum_{n>..h>j>k=1}^{n} P\left(E_k E_j E_h \ldots E_n\right) \quad (2)$$

or:
$$\mathrm{P}(E) = P(\bigcup_{k=1}^{n} E_K) = \sum_{k=1}^{n} P(E_k) + AJR = ASR + AJR \quad (3)$$

[2] The author is very grateful to Domenico Sartore for correcting an error in the previous version of this paragraph and the following ones that were wrong and confusing on the issue of the relations between logical independence, stochastic independence, and incompatibility. Remaining errors are the responsibility of the author.

[3] If these n events were to form a complete partition, then each event would also be necessarily logically independent from all the others, and the probability of the event sum would be the sum of the probabilities.

Because the term ASR is necessarily positive, relation (3) implies that AJR is negative so that the aggregate risk is lower than the sum of individual risks ASR, as required by the theorem of total probability. For example, if there are 4 compatible events, and all events have an equal probability $P(E_i) = 0.2$, i= 1, …4, one has:

$$P(E_1 \vee \ldots \vee E_4) = ASR_4 + AJR_4 = \ 0.8000 - 0.2096 \ = \ 0{,}5904$$

It is interesting to look at the sensitivity of (3) to a change in the number n of compatible events of equal probability α to see to see how the "specific" and the "joint" component evolve when the number of events increases. One must observe that in this case it is possible in principle that for n big enough, say n>n*, ASR>1; but in that case it means that the events added after n* are in fact not incompatible with the previous ones. Therefore, to remain consistent and meaningful, either one must assume that AJR≤1 or one must renormalize the results of the calculation in such a way that ASR and AJR are both ≤1 (in absolute value for AJR) and their sum gives P(E). Save for possible errors in the preliminary algebraic manipulations done for normalisation[4], this sensitivity is shown in the charts below, where it is assumed that α=20% and that n goes from 10 in the first chart to 100 in the third.

Figure 2: Sensitivity of combined probability to the number of equiprobable events

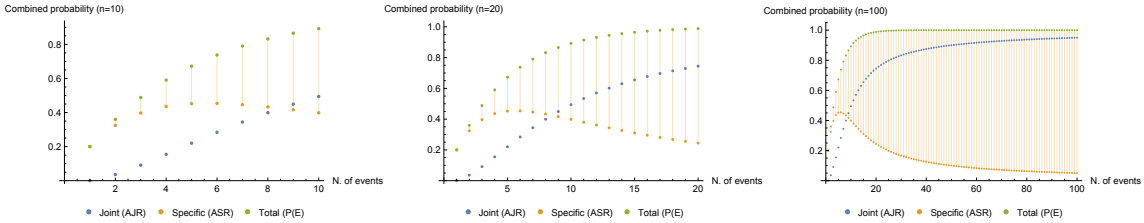


Figure 2 illustrates the intuitive result that as the number of equiprobable events increases, the combined probability that at least one of them occurs increases and tends to one. In addition, the "joint" component of this probability increases proportionally faster compared to the "individual" probability of each component event taken separately. The latter decreases in proportion to the total combined probability as soon as the events become logically dependent, which starts necessarily when n exceeds $1/\alpha$ (5 in this example)[5].

To the extent that the event(s) or risk(s) included in (3) affect several individuals the component AJR in relation (3) above could be interpreted as a "social risk", coming from the interaction of uncertainty affecting several individuals. Alterative cases could be those where all events (or one single event) affect one (or several) individuals. These alternative cases could combine in various ways. The interpretation of relation (3) depends also on whether the family of events taken individually in ASR represent or not an exhaustive partition of incompatible events, for which it is certain that one and only one of these events will occur. In this case this family of n events generates 2^n possible combination. If all events these are incompatible and some of the 2^n logical combinations are impossible, s

[4] The normalisation was done as follows: P(E) = ASR + AJR, where AJR ≤0. Therefore ASR = P(E) - AJR. Multiplying by P(E) and dividing by ASR, one gets P(E)= P(E)*[P(E)-AJR]/ASR = P(E)2/ASR-AJR/ASR, where both terms of the sum are positive. The calculation of P(E), ASR and AJR is relatively simple once one uses: $P(E) = 1 - \prod_{k=1}^{n}(1 - P[E_k])$ and AJR = P(E) - $\sum_{k=1}^{n} P(E_k)$.

[5] With n<5, the events do not need necessarily to be logically independent, but, by the theorem of total probability, the total probability of their intersections is proportionally smaller than the sum of their individual probability.

events (with s<n) are sufficient to generate all combinations. In both cases (s=n, or s<n) the events are called constituents (de Finetti, 2017, pp. 36-37)[6]. Finally, one can note that when ASR is >1 the n events are necessarily compatible and that whatever interpretation is retained for (3), the term representing the "joint risk" AJR is negative. This points to the fact that some compensation occurs between the interactions between risks of compatible events and raises the more general issue of the compensation between risks.

One could consider that some of the events appearing in relation (3) can compensate between each other either because they are stochastically independent and cancel each other randomly, or because they are stochastically dependent and negatively correlated. If one thinks of individuals and their social interactions, some compensation may occur if what is a risk for one individual may be an opportunity for another one, in line with the concept of externality, as defined for instance in Meade (1952).

Insights from the insurance literature: collective risk theory: The aggregation of risks is treated in the actuarial literature on collective risks and its extensions, starting generally, in the original theory, from an assumption of stochastic independence between risks[7]. The problem is often set in terms of probability of ruin for a company exposed to risks that covers itself with a guarantee fund of a known amount that follows some rules. The asymptotic conditions for ruin never to occur for a time indefinitely long are then examined. De Finetti (1939) notes that the main aspects examined by this literature can be summarized based on the example of the ruin of players considered in the traditional probability literature (notably by De Moivre)[8]. In the case of two players playing against each other with initial funds of G' and G'', the classical result is that their probability of ruin, noted P' and P'', is given respectively by G''/(G'+G'') and G'/(G'+G''). De Finetti then generalises the example to cover the cases of an infinite number of stochastically independent risks α, showing that in this case the probabilities P' and P'' become:

$$P' = \frac{e^{\alpha G''}-1}{e^{\alpha(G'+G'')}-1} \qquad P'' = \frac{e^{\alpha G'}-1}{e^{\alpha(G'+G'')}-1}$$

He notes:

[6] de Finetti, 2017, pp. 36-37. De Finetti uses constituents to introduce the notion of logical independence, which is relevant for the case of certainty and should be distinguished from the notion of stochastic independence, that refers to uncertainty and probability. De Finetti defines n events (necessarily possible) to be logically independent if "they give rise to n possible constituents" (p. 37). In a way, n logically independent events represent a sort of "basis" for a n-dimensional vectorial space and all events defined in this space are logically dependent in the sense that they can be expressed as a linear combination of the constituents. Logical independence is related to compatibility, because constituents are necessarily incompatible (they are an exhaustive and incompatible partition of "maximum rank"). On the contrary the notion of stochastic independence is totally unrelated to compatibility and incompatibility, as Prof. Sartore made clear to the author. Compatible or incompatible events can be (or not) stochastically independent. In the latter case, the probability of their intersection is given by the product of their probabilities, whereas the probability of their union remains as given by relation (3).

[7] See Embrechts, Klüppelberg & Mikosch, [1997] 2001, §1.1-§1.2 and also Bühlmann (1996 [1970]). In his book on the aggregation of stochastic variables, Levy declares (1937, p. 3): "Sauf dans les derniers chapitres de cet ouvrage, nous aurons surtout à considérer le cas des probabilités indépendantes," and in fact he devotes only the chapter 8 to the "variables enchaînées". Later the subject was developed by Fréchet (1940 and 1943). The contemporary literature extended the traditional risk theory to the case of heavy tails, see Embrechts, Klüppelberg & Mikosch, [1997] 2012, §1.3-§1.4 as well as §8.3 and has studied also cases where some structure exists between individual risks, see Embrechts & Puccetti (2010). See also: Denuit, Dhaene, Goovaerts & Kaas (2005).

[8] Contrary to classical collective risk theory, de Finetti does in fact not think that it is possible to bring asymptotically the probability of ruin to zero, as made clear in de Finetti (1976). This brough him to propose an alternative approach to risk theory consisting in maximizing the period of survival for a given and positive probability of ruin (de Finetti, 1957).

> *"La rovina di chi gioca indefinitamente contro un avversario infinitamente ricco è dunque praticamente certa se egli gioca a condizioni eque o sfavorevoli, mentre invece se le condizioni sono non eque a suo favore egli ha una probabilità non nulla di sfuggire alla rovina purché disponga di un capitale iniziale, ed anzi la probabilità di rovina tende a zero, decrescendo in progressione geometrica, al crescere di tale capitale iniziale."*[9] *(1939, p. 48)*

Applying the argument to an insurance company that wants to ensure a capital C with a pure premium (probability) p with a mark-up m to cover its costs and with an initial capital (guarantee fund) of B, de Finetti derives the characteristic function as:

$$\varphi(t) = pe^{Ct(1-p-m)} + (1-p)e^{Ct(p+m)}$$

And he uses it to find a simple expression for the maximum insurable amount for a given level of risk B:

$$C = \frac{2mB}{p(1-p)}$$

This maximum insurable amount is thus directly proportional to the mark-up m and inversely proportional to the square of the standard error $\sigma = \sqrt{p(1-p)}$.

Insights from the insurance literature: risk diversification: The simplified presentation of the risk of ruin as developed by the traditional collective risk theory can be complemented with the equally simple presentation de Finetti makes of the compensation between similar independent risks across individuals in the textbook on the *Economics of Insurance*. With n stochastic gains X_h, h=1,….n, with equal standard error $\sigma_1 = \sigma_2, = \sigma_n = \sigma_0$, the standard error of the total gain X is $\sigma^2 = n\sigma_0^2$, which implies that $\sigma = \sigma_0\sqrt{n}$, therefore when the number of equal risks taken increases, the aggregate risk increases but less than rapidly than n, which implies that in relation to n, and therefore to all variables proportional to n such as insurance premiums or mark-ups, the risk decreases like $1/\sqrt{n}$ (de Finetti & Emanuelli, 1967, p. 115). If there is a positive correlation between risks, and if risks are all equal ($\sigma_h = \sigma_o$) and equally positively correlated between each other (r_{hk}=r), one finds $\sigma^2 = n\sigma^2 + n(n-1)r\sigma_0^2$, hence: $\sigma = \sigma_0 n\sqrt{r}\sqrt{1 + [(1-r)/r]/n}$, implying that risks does not grow more slowly than n, it is only reduced for large n in a fix ratio from 1 to $\sqrt{r}$ compared to a unique insurance of all risks together (ibid.). Negative correlations are also possible, but this case cannot be symmetrical to the previous one, where standard errors are all equal. To avoid having a negative variance one must impose a condition that $n \leq 1 + 1/|r|$., which in the limit case implies that variance is 0. If on the contrary the correlations are not equal, the case will obviously be more favorable than that of independent risk (ibid.).

Implications for the aggregation and distribution of profits: As reviewed briefly above, insurance activity is traditionally based on the principle of mutuality of risks (Bühlmann, 1995), which allows to generate win-win results, where better protection of the insured is compatible with healthy profits for the insurer because of the diversification of risks in the aggregate.

[9] "For a player playing for ever against a richer player ruin is almost sure if the game is fair or unequal for him, whereas if conditions are biased in his favor, he has a non-zero probability to avoid ruin if he has an initial capital, and the ruin probability tends to zero decreasing in geometric progression when his initial capital increases". Author's translation.

If however, profit is the remuneration of risk, the above arguments linking risk to initial capital and to its possible diversification in the aggregate extend to profits as well and have also macroeconomic implications.

Implications of "collective risk" theory for individual investment: Kalecki's([1937] 1990) principle of increasing risk asserts that the quantity that a firm will be ready to invest is proportional to its initial capital, because the risk taken by entrepreneurs and the financiers supporting him is inversely proportional to the initial capital. Indeed, retaining the assumption that the marginal risk is a function of the amount invested (as the above developments on ruin probability naturally lead to think) the amount invested by an entrepreneur will be limited by the size of its capital. This explains that "the enterprises started in a given industry at a given time are not of equal size because the private capital of the various entrepreneurs is not the same. 'Business democracy' is a fallacy: the amount of the entrepreneur's private capital is a 'factor of investment'." ([1937] 1990, p. 289)

Indeed, the type of distribution of firms' financial results by size that are observed empirically, which are highly skewed, are consistent with Kalecki's interpretation, and it was sometimes formalized in terms of Gibrat and/or Pareto distributions. This empirical result was explained by assuming it is generated by stochastic processes where the growth of the firm is a random factor independent from its initial size[10]. This is not necessarily in contradiction with the fact that risk is an inverse function of initial capital, in the sense that the growth of firms could be dependent on random factors not connected with its risk and the causality could change after aggregation (see below). One can also note that "heavy-tailed distributions" are considered as typical in the insurance activity, where they give rise to the expectation of large claims (see Embrechts, et al. [1997] 2001, pp. 32-36 and the references quoted there).

Implications for aggregation based on the diversification argument: Risk diversification must be examined in the light of its macroeconomic consequences. To the extent that profits are taken to be the remuneration for risk, they present the same aggregation issues. Because aggregate risk is different from the sum of individual risks and profit is the remuneration for risk, profits in the aggregate are not the sum of individual profits and indeed there is a literature trying to correct national accounts for that reason (Vallageas, 2010). This has obvious implications for the macroeconomic distribution between wages and profits and, to the extent that the latter impacts on allocation out of maximum efficiency, also on the rest of the economic variables.

There is indeed a potential for a *fallacy of composition* in going from individual to aggregate risks. This represents a possible problem for *methodological individualism*, for which: "the whole is the sum of the parts". It opens the way for those macroeconomic approaches that

[10] An early reference to the Pareto distribution with reference to the size of firms can be found in Steindl (1945, 1978), who was a student of Kalecki, while the log-normal had been invoked previously by Gibrat (1931). These distributions of firm sizes and other related variables have been tentatively explained in terms of the underlying stochastic processes able to generate them (Steindl, 1965). Simon (1955) emphasized that a common factor the underlies the evidence concerning the Pareto and Gibrat's distributions is that the growth rate of a variable (such as turnover or profits) is stochastically independent from its initial level. When applied to the size of companies, this implies the absence of diminishing returns, i.e. the lack of a key condition that would exclude on the one hand the indeterminacy of the number of optimal firms (under constant returns) or oligopoly and natural monopoly (under increasing returns).

reject methodological individualism based on Kalecki's theory of profits and of a monetary reading of Keynes (Graziani, 2003, p. 18-22). For instance, in several of her writings quoted in her recent last book, Carabelli argued that the fallacy of composition at the center of Keynes' macroeconomic project in the *General Theory* originates in his views on probability and his related criticism of the use of the tacit assumption of logical independence in matters where this is not justified (Carabelli, 2021, pp. 78-83). Carabelli & Cedrini (2014) stress in particular that for Keynes the separation between dependent and independent variables cannot be the same at individual and at aggregate level. This theme, which brings ultimately to envisage macroeconomic foundations for microeconomics, cannot be developed here, but it is noteworthy that it was considered relevant by authors with such diverse methodological backgrounds as Frank Hahn (2003) and Alvaro Cencini (2006).

For the purposes of this text, the issue of risk aggregation and fallacy of composition will only be briefly discussed with reference to its implications for the inference to be drawn from the observation of differences in aggregate risk levels across countries, as evidenced by differences in the price of country risk. Using the mainstream economic approach for normative purposes, one would expect that in a perfect market there should be a single price of risk once diversification has played all its effects (Borch 1961, 1962). When comparing different spatially separated markets and observing different prices for "aggregate risk" (say country risk), it is arguable, although the possible demonstration must be left for further research, that these differences arise because the market is not able to diversify the collective (in the sense of compatible) portion of the aggregate risks[11].

Therefore, not only there is a presumption of market failure in high risk environments (because of a lack of a single price and other aspects of "market incompleteness") but this market failure may well relate to the aggregation of risks arising from interactions between different non-atomistic individuals. When comparing the evidence on aggregate risk provided by sovereign risk premia, there is therefore at least some partial justification to interpret the inter-country differences in risk premia as a failure of the market to diversify away the "collective" or social part of the risks involved. This is a failure to put all individuals on an equal footing as far as individual risks are concerned, individual risks that should in principle be assumed to be the same for spatially aggregated groups of individuals such as those leaving in the same regions or countries.

The hypothesis is thus formulated for discussion and further research that the difference in country risk premia could be a useful pragmatic proxy (if not a lower or higher bound) for the magnitude of the market failure that must be addressed by policy to put all (private) individuals in front of the same opportunities. It could therefore be used in the assessment of financial products designed for the private sector in high-risk environments as a reference for the calculation of the admissible grant element for support to the private sector (so-called concessionality element).

[11] *A contrario*, one could say that if the market was able to insure the social (in the sense of compatible) portion of the aggregate risk (AJR in the relation 3 above), social security would not exist. Whether or not this argument is found convincing, it is intuitive that it is difficult to incorporate "collective risk" in the above sense of "social", with marginal pricing, because the same problem arises that exists with public or "collective" goods, which are recognized to be undersupplied by a competitive market.

Country risk premia for the Western Balkans

The arguments discussed in the previous section seem abstract and detached from reality, but they are relevant for their possible policy implications. Take for example the case of the EU development policy outside of the European Union. This policy typically uses instruments such as equity, quasi-equity, loans and guarantees priced on market terms that are blended in variable proportions with EU grants to support investments located in countries where generally investors pay high risk premia because of the location of their investments.

If one wants to define the "grant element" that would be justified to enhance the attractiveness of a particular financial product in such countries, one will first need to consider whether the country's risk premium to which this project is subject is actuarially fair or not. If it is fair, one would need to assess the relative capacity of the various financial instruments to address the development problems that are defined as priority by EU policy when they are priced at market terms, i.e., including this premium. If it is not fair, because it is linked to a market failure, there might be grounds to discuss what corrections should be given to market prices to obtain accounting prices of relevance for policy purposes [12].

What is the risk specific to an investment located in the Western Balkans? A first answer comes from the risk premium paid by the governments of these countries when they access national or international capital markets, which are typically in the range 300-600bp. Table 1 below presents these country risk premia collected by Domadoran (2020), who also calculates an "equity risk premium", which for the region appears to be above 800bp.

Table 1: Country risk premia - Western Balkans

	Moody's rating	S&P rating	Country risk premium	Rating based default spread	Sovereign CDS	Total Equity Risk Premium
Albania	B1	B+	3,98%	3,98%	NA	8.7%
Bosnia-Herzegovina	B3	B	5,75%	5,75%	NA	10.47
Montenegro	B1	B+	3,98%	3,98%	NA	8,7%
North Macedonia	NA	BB-	3,18%	3,18%	NA	7,9%
Serbia	Ba3	BB+	3,18%	3,18%	1,38%	7,9%

Source: Damodaran (2020)

The same source provides the equivalent risk premia of neighboring countries: 221% for Croatia, 106% for Slovenia, 141% for Bulgaria, 195% for Romania, 318% for Greece, 195% for Italy and 0.35% for Austria, showing that the Western Balkans region pays a country premium of at least 100bp and more often of 200-300bp above its main neighbors. Other

[12] Although the point made here is not directly related to it, one can note that based on his theory of the national and international money, Bernard Schmitt (1975) argued that developing countries having a current account deficit pay interest twice on their external debt in international currency. His argument was generally neglected, but never really proved wrong either. If it were correct, there would be substantial theoretical grounds to argue that the price paid by these countries for foreign exchange, which is discounted in the risk premia they pay on external debt, is not actuarially fair. Cencini (2008, pp. 302-311 and 384-386) gave a relatively recent restatement of Schmitt's argument.

possible measures of the country risk in the region are discussed in the next paragraph and may include the number of enterprises that close their accounts every year (10%), or the percentage of collateral asked by the banking sector when providing a loan to an SME (200-300% of the value of the loan).

An analysis of the SME sector in the Western Balkans

This section reviews some of the findings of a research that looked at the SME development in the Western Balkans and examined in more detail the financial accounts of all Serbian firms for the period 2009-18 (Atanasijević, Corradin, Sartore, Uvalic, Volo & Cingolani, 2021).

The productive structure of the private sector of the Western Balkans countries is made essentially of small enterprises, as shown in Tables 2 and 3 reproduced from the study.[13]

Table 2: Enterprise employment in the Western Balkans, by firm size (2017 or latest year available)

	Albania		BiH		Kosovo		N. Macedonia		Montenegro		Serbia		EU28
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Share
Micro	121 537	*30.74*	64 906	*14.01*	62 450	*34.92*	123 077	*31.91*	51 569	*38.96*	415 762	*31.42*	*29.4*
Small	86 221	*21.81*	105 631	*22.80*	40 727	*22.77*	87 466	*22.68*	26 263	*19.84*	213 380	*16.12*	*20.2*
Medium	98 440	*24.90*	125 614	*27.11*	33 075	*18.49*	77 801	*20.17*	28 182	*21.29*	244 320	*18.46*	*16.9*
SMEs	**306 198**	***77.46***	**296 151**	***63.92***	**136 252**	***76.19***	**288 344**	***74.75***	**106 014**	***80.09***	**873 462**	***66.00***	***66.5***
Large	89 113	*22.54*	167 186	*36.08*	42 588	*23.81*	97 384	*25.25*	26 352	*19.91*	449 963	*34.00*	*33.5*

Source: Adapted from OECD (2019), p. 41 and European Commission (*2019a) SBA Factsheets* for the individual Western Balkan countries.
Note: These figures are the most recent data provided by the national statistical offices of the Western Balkan countries. They refer to 2017, except for Albania and Kosovo that are for 2016, while data for North Macedonia are provisional.

As shown by table 2, SMEs, defined as those companies with less than 250 employees, represent between 66% and 77% of total employment in the Western Balkans. In Table 3, it can be seen that for value added, the share of SMEs is comprised between 57% and 91%.

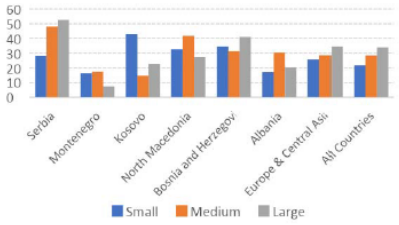
Table 3: Enterprise value added (Euro million) in the Western Balkans, by firm size (2017 or latest year available)

	Albania		BiH		Kosovo		N. Macedonia		Montenegro		Serbia		EU28
	VA (€mn)	Share	VA (€mn)	Share	VA (€mn)	Share	VA (€mn)	Share	VA (€mn)	Share	VA (€mn)	Share	Share
Micro	651.5	19.36	883.8	11.90	39.9	13.16	890.3	20.93	0.7	44.68	4 241	21.99	*20.5*
Small	772.4	22.95	1 709.1	23.02	61.5	20.29	956.4	22.48			2 963	15.36	*17.6*
Medium	759.4	22.57	1 847.9	24.89	144.1	47.52	867.1	20.38	0.4	25.80	3 723	19.30	*18.1*
SMEs	**2 183.4**	**64.88**	**4 40.1**	**59.81**	**245.6**	**80.97**	**2 713.8**	**63.80**	**1**	**70.48**	**10 927**	**56.66**	***56.3***
Large	1 181.9	35.12	2 984	40.19	57.7	19.03	1 539.9	36.20	0.5	29.52	8 359	43.34	43.8

Source: Adapted from OECD (2019), p. 41 and European Commission (*2019a) SBA Factsheets* for the individual Western Balkan countries.
Note: These figures are the most recent data provided by the national statistical offices of the Western Balkan countries. They refer to 2017, except for Albania and Kosovo that are for 2016, while data for North Macedonia are provisional.

Financial markets are underdeveloped in the region, with only 20% of SMEs using banks to finance investments, as shown in Figure 3.

Figure 3:Percentage of firms using banks to finance investments in the Western Balkans

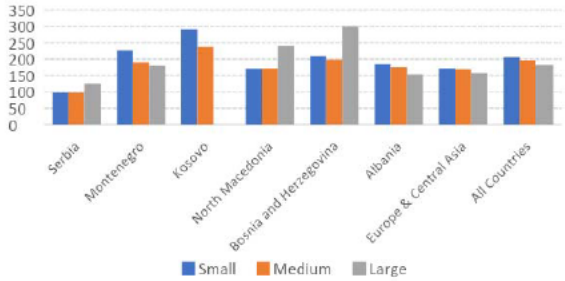


Source: Enterprise Surveys (2019), The World Bank, http://www.enterprisesurveys.org
Note: "All countries" bars refer to the average for latest available survey data for all 146 surveyed countries in the period 201-2020.

[13] All tables and figures in this section are reproduced from this study.

An indicator that such a low development of Bank's lending is due to risk is provided by the high level of collateral requirements, which is between 150-200% in the region (Figure 4).

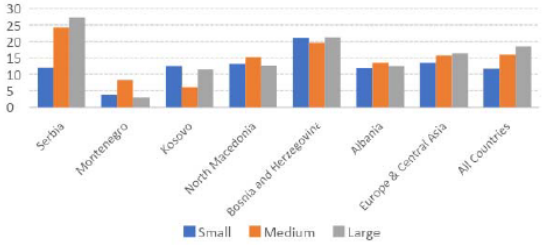
Figure 4: Value of collateral need for a loan (% of the loan value)



Source: Enterprise Surveys (2019), The World Bank, http://www.enterprisesurveys.org
Note: "All countries" bars refer to the average for latest available survey data for all 146 surveyed countries in the period 201-2020.

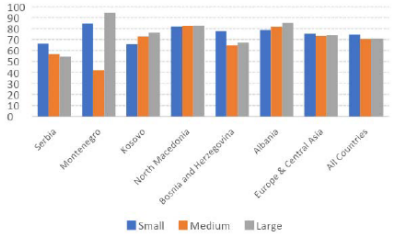
In these conditions, it is not surprising that the proportion of investment financed by banks is low, between 10% for SMEs and 20% for large firms in the whole region, as shown in Figure 5 and that most firms in the region (70%) finance their investment with their own funds, as shown in Figure 6.

Figure 5: Proportion of investment financed by Banks (%)



Source: Enterprise Surveys (2019), The World Bank, http://www.enterprisesurveys.org
Note: "All countries" bars refer to the average for latest available survey data for all 146 surveyed countries in the period 201-2020.

Figure 6: Proportion of investment financed internally (%)



Source: Enterprise Surveys (2019), The World Bank, http://www.enterprisesurveys.org
Note: "All countries" bars refer to the average for latest available survey data for all 146 surveyed countries in the period 201-2020.

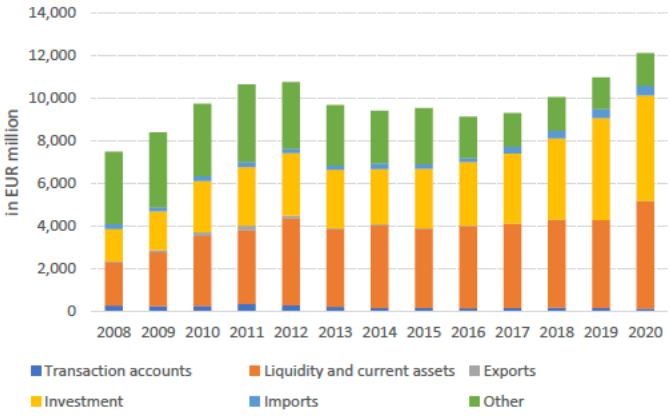
For Serbia, Table 4 below gives the structure of the productive sector by size of enterprise.

Table 4: Serbia: business sector statistics by enterprise size in 2018

	Micro (0-9 employees)	Small (10-49 employees)	Medium (50-249 emloyees)	Large (250 and more emloyees)	Total
Number of enterprises	73.663	10.778	2.430	536	87.407
	84%	*12%*	*3%*	*1%*	*100%*
Number of persons employed	217.305	216.456	252.191	475.625	1.161.577
	19%	*19%*	*22%*	*41%*	*100%*
Turnover, by classes of persons employed, in million	12.372	18.911	20.774	35.902	87.958
	14%	*21%*	*24%*	*41%*	*100%*
Value added, in million EUR	1.776	3.209	4.220	8.883	18.088
	10%	*18%*	*23%*	*49%*	*100%*

Source: Statistical office of the Republic of Serbia, Methodological note (accompanying the original data provided by the Statistical office of the Republic of Serbia):

Figure 7: Banking sector loans to the enterprise sector in Serbia by purpose of the loan

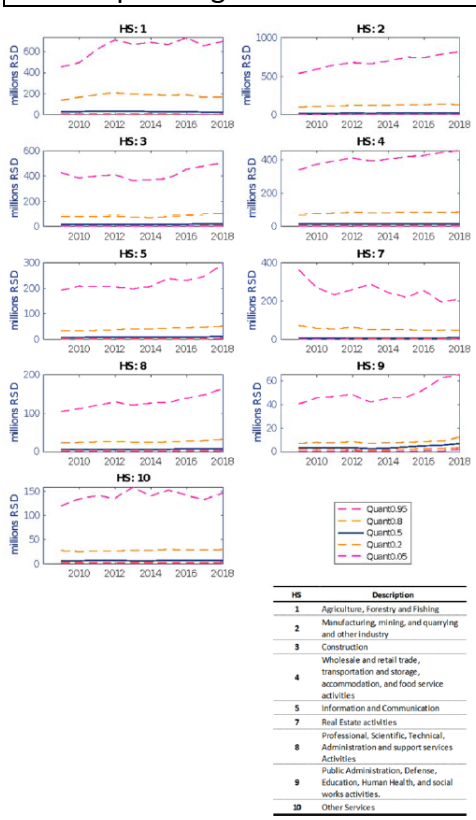


Source: Compiled by the authors based on data of the National Bank of Serbia

Banking loans are shown in Figure 7 above, which shows that investment represents some 40% of total bank lending to the corporate sector. In terms of distribution of the main financial variables, the detailed analysis of the 66,000 Serbian enterprises shows that the dynamic evolution of the distribution of operating income is highly skewed on the right, as evidenced by Figure 8 below, also extracted from the same report[14]. The same is true for value added, cash flow, and employment.

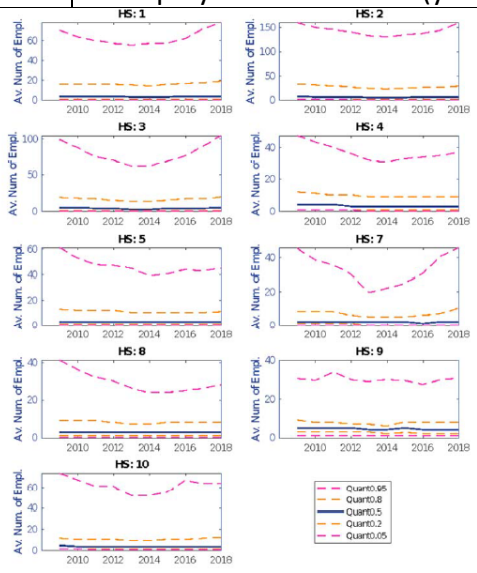
Figure 8: Operating income (left) and value added (right) of Serbian companies, distrib. of quantiles

Operating income in million RSD	Employment – number (yearly average)



HS	Description
1	Agriculture, Forestry and Fishing
2	Manufacturing, mining, and quarrying and other industry
3	Construction
4	Wholesale and retail trade, transportation and storage, accommodation, and food service activities
5	Information and Communication
7	Real Estate activities
8	Professional, Scientific, Technical, Administration and support services Activities
9	Public Administration, Defense, Education, Human Health, and social works activities.
10	Other Services

Source: GRETA elaborations



HS	Description
1	Agriculture, Forestry and Fishing
2	Manufacturing, mining, and quarrying and other industry
3	Construction
4	Wholesale and retail trade, transportation and storage, accommodation, and food service activities
5	Information and Communication
7	Real Estate activities
8	Professional, Scientific, Technical, Administration and support services Activities
9	Public Administration, Defense, Education, Human Health, and social works activities.
10	Other Services

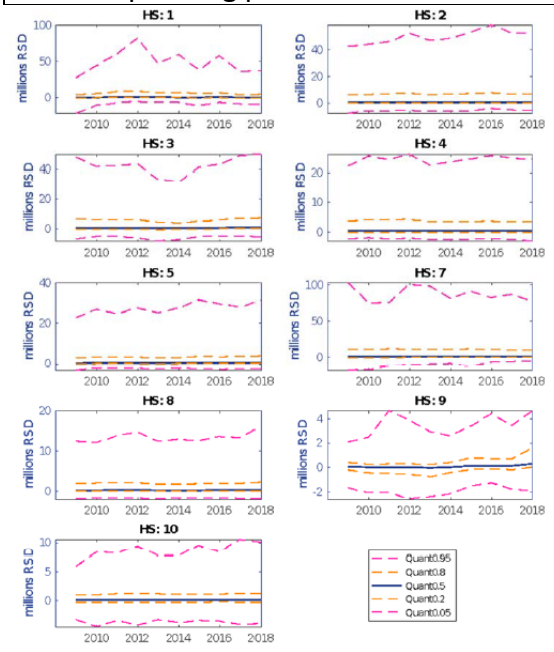
Source: GRETA elaborations

[14] $q_{0.5} - q_{0.2} < q_{0.8} - q_{0.5}$ indicates asymmetry to the right of the distribution. In this case, the value of the mode of the distribution (i.e. the value with maximum frequency) is lower than the median and the mean. Therefore, the higher frequencies appear for values well below the mean (and the median).

As shown by Figure 9 below (on the left), operating profit is also skewed to the right when taken in absolute terms. On the contrary when taken in percentage of operating income (right), operating profit is skewed to the left, which simply means that the operating income is more skewed than operating profit. These distributions are typical of high-risk environments (Embrechts, Klüppelberg & Mikosch, [1997] 2012). For the case of operating profit in percentage of turnover, Figure 9 shows that some 50% of the Serbian companies have an operating profit that is negative in % of turnover.

Figure 9: Operating profit (left) and operating profit as a % of operating income (right) of Serbian companies, empirical distribution of quantiles

Operating profit in million RSD	Operating profit as a % of operating income



HS	Description
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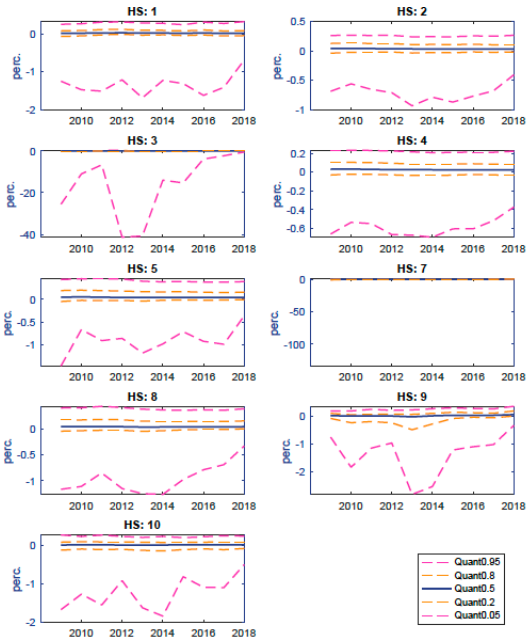
2	Manufacturing, mining, and quarrying and other Industry
3	Construction
4	Wholesale and retail trade, transportation and storage, accommodation, and food service activities
5	Information and Communication
7	Real Estate activities
8	Professional, Scientific, Technical, Administration and support services Activities
9	Public Administration, Defense, Education, Human Health, and social works activities.
10	Other Services



HS	Description
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5	Information and Communication
7	Real Estate activities
8	Professional, Scientific, Technical, Administration and support services Activities
9	Public Administration, Defense, Education, Human Health, and social works activities.
10	Other Services

Source: GRETA elaborations

The highly skewed distribution of variables relating to the size of enterprises is known since long. In general, early studies found that the distribution of companies by size could be described as either a Pareto distribution (Steindl, 1945, 1978) or a log-normal distribution (Gibrat, 1931) and this has received several possible explanations in terms of the underlying stochastic processes able to generate such distributions (Steindl, 1965). Simon (1955) emphasized a common implication of the evidence concerning the Pareto and Gibrat's distributions which is typical of a situation where the growth rate of a variable (such as turnover or profits) is stochastically independent from its initial level.

When applied to the size of companies, this independence implies the absence of diminishing returns, i.e. the lack of a key condition that would exclude on the one hand the indeterminacy of the number of optimal firms (under constant returns) or oligopoly natural

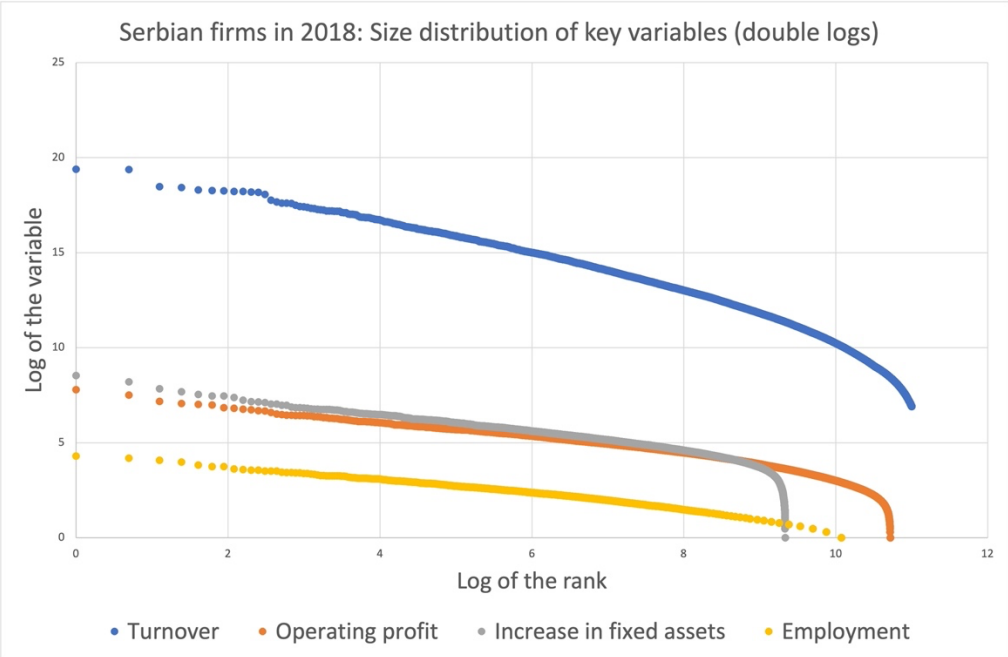
monopoly (under increasing returns). However, neither Gibrat's nor Pareto's laws fully apply to the size distribution of firms: Gibrat's law was both confirmed and infirmed by a large number of studies, whereas for SMEs Pareto's law applies in general only to the upper tail of the distribution (see also Kleiber & Kotz, 2003).
In general, a quick test of the Pareto distribution can be done by plotting the rank of a variable against its level on a double logarithmic scale. If the result is a straight line, at least on a portion of the graph, on that portion there is evidence for the Pareto distribution. As an illustration Figure 10 below presents this plot for the turnover, the operating profit, increase in fixed assets and employment in the Serbian firms for the year 2018. It shows that except for larger firms, there is a presumption of a Pareto size distribution of the variable, particularly for employment.

The empirical evidence concerning the Serbian productive sector thus confirms the predominance of highly skewed distributions likely to generate extreme values and thus high risk. Against this background of high-risk, the question is what the justification for and the possible impact of financial instruments deployed to develop investment of SMEs is. The instruments deployed in the multilateral setting of the Western Balkans Investment framework are discussed in the next session.

Experience with the use of financial instruments for the private sector in the Western Balkans

One can examine the main financial products offered in the six countries of the Western Balkans by the *Western Balkans Investment Framework* (WBIF) and its *Western Balkans Enterprise and Development Innovation Facility* (WB-EDIF). These products are offered together by several financial institutions and donors to investors located in the Western Balkans.

Figure 10: Serbian market in 2018: distribution of key variables



Below, the instruments available from WB-EDIF for the Western Balkans are briefly presented and an attempt is made to calculate their approximate grant equivalent. The logic

is that this grant equivalent should be lower than the estimated market failure. A brief indication will also be given of their likely impact on the macroeconomic distribution between capital and labour.

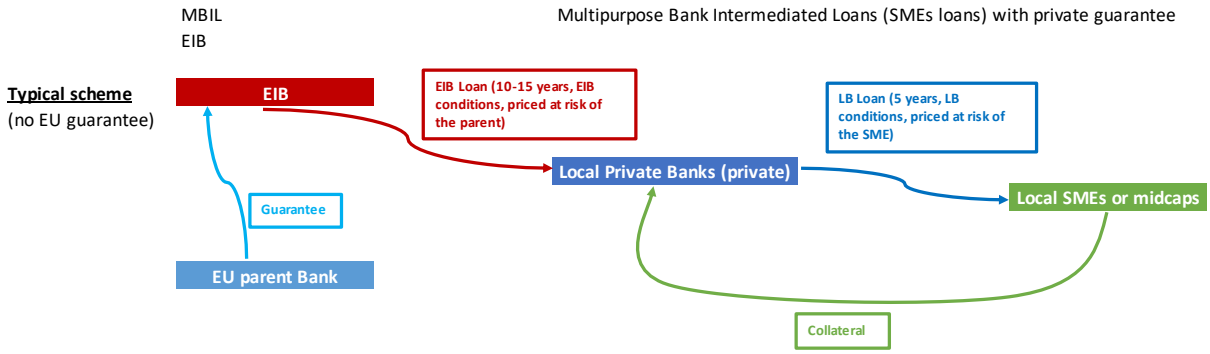
Intermediated credit lines (EIB)

Multipurpose Bank Intermediated Loans are the standard product that EIB offers to finance small-scale investment and SMEs. The typical prototype in the Western Balkans is purely channelled through the private sector. EIB provides a credit line to a local intermediary bank, often foreign. The loan conditions are adapted to the risk of the borrower (in this case the local bank), which is enhanced by a first demand guarantee from the mother bank, generally located in the European Union.

The funds provided can be used to finance small scale projects and SMEs in all eligible sectors (most sectors excluding arms, narco-traffic etc.). The local bank uses the liquidity provided at good conditions by EIB to finance eligible borrowers and projects (generally SMEs, mid-caps and small-scale infrastructure). EIB loan typically finances 50% of investment costs only, the minimum leverage of these loans on investment is thus 2.

The local bank fully assumes the risk of their final sub-borrower and price it accordingly. However, they have a contractual commitment to reduce this pricing to final beneficiaries by a portion of the EIB financial advantage. Apart from that, EIB does not interfere with the credit risk decision of the local Bank, but it is informed of the use that was made of the loan and verifies eligibility of the sub-loans (called allocations).

Figure 11, Multipurpose Bank Intermediated Loans

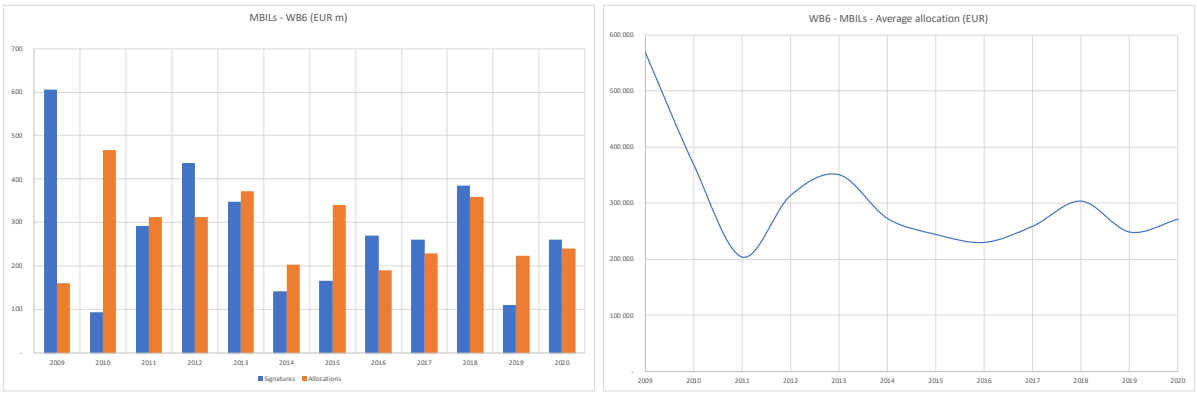


As shown in Figure 12, the EIB provides between EUR 100m and EUR 300 m per year of loans to SMEs, mid-caps and small infrastructure in the 6 countries of the Western Balkans. The average allocation (see the second chart in Figure 12 below) gives an idea of the relatively small size of the EIB sub-loans.

Impacts: in the standard MBIL structure the grant element is virtually absent. The "good price" offered to the intermediary bank by the EIB is a market price in the sense that it allows EIB to recover its costs. Concerning the impact on distribution, the "first round" impact is mainly supporting investment, therefore ultimately profits. However, to the extent that some working capital is also included in the eligible cost of the loan or the associated project, there is also an impact on increased wages. In the second round, while investment is implemented, part of the profit generated in the first round will be transformed into

wages. Taking for granted that most employment is due to SMEs, investment is likely to be accompanied by job creation or at least support to existing jobs.

Figure 12: EIB MBILs

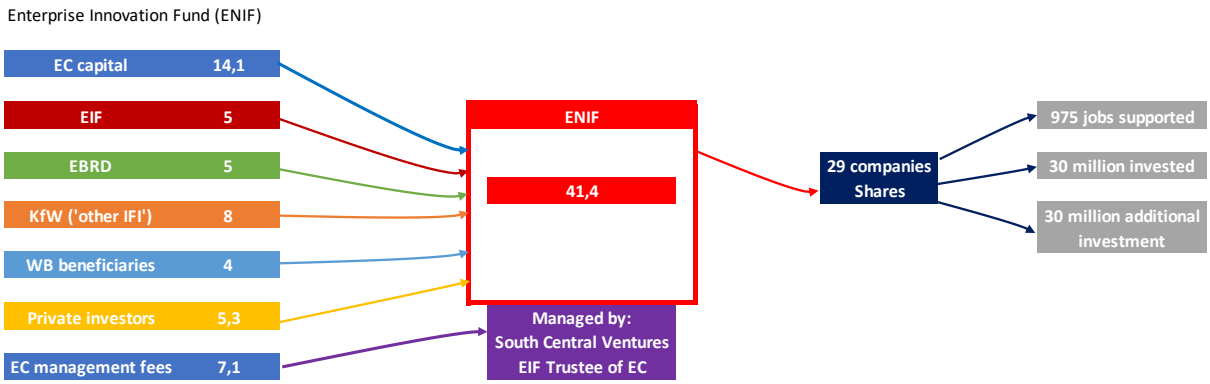


A variant of this scheme is when the EIB credit line is guaranteed by the budget of the European Union (for instance in APEX, structures or for operations with local banks that do not have an EU parent). In this case, which correspond to about 25% of EIB MBIL activity in the region, the grant element can be estimated at 7% of the value of the EIB loan (3,5% of the value of the leveraged investment).

Enterprise Innovation Fund (ENIF)

The Enterprise Innovation Fund is a venture capital fund created with resources provided by the donors participating in WB EDIF who brought collectively to the fund EUR 41.4 m. All investors brought fresh cash. ENIF is managed by a professional Fund Manager (South Central Ventures). The purpose is to reach with equity contribution innovating companies that normally would not have access to Bank finance either because they are start-ups or because they are too risky.

Figure 13: Enterprise Innovation Fund (ENIF)



Impacts: The fund has supported so far 29 companies, in which it invested EUR 30m supporting 975 jobs. The leverage can be estimated at 2.

The initial grant element is close to 100%, as, except for the funds provided by private investors, all investors provide resources that are coming in one way or another from the public sector. When the investors will exit some ten years after they first invested, they will

sell their shares and thus recover the grants provided, except for possible losses. The impact of the instrument on distribution is initially essentially on capital, as any grant from the public sector to the private sector is initially supporting profits. Later, the revenue created can also be used to support wages.

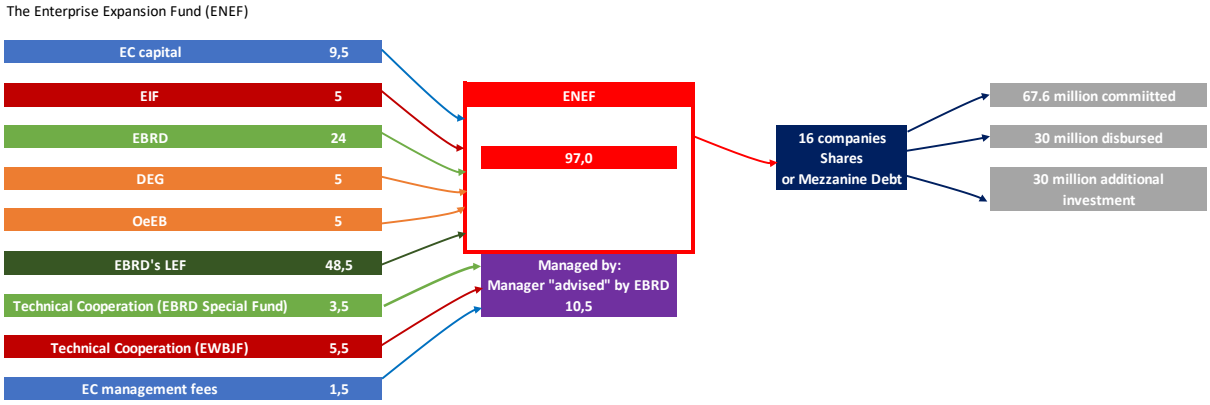
The Enterprise Expansion Fund (ENEF)

The Enterprise Expansion Fund supports fast-growing SMEs with equity contributions, quasi-equity contributions and to a limited extent - debt funding. ENEF collected 48,5 million from its different donors, which were matched one to one with funds coming from the EBRD's LEF instrument.

Impacts: ENEF supported 16 companies to which it disbursed so far EUR 30m, which were matched with an equal amount by EBRD's LEF. EUR 7.5 m have already been given back to investors. All beneficiaries are SMEs and received support from the EBRD's Small Business Advisory Support programme (SBS). Leverage is minimum 2 and can be estimated to reach up to 4.

The initial grant element is 100% for ENEF, as there are no private investors. As for ENEF later the investors will recover their contributions, save for possible losses. Also, like ENIF, the initial impact on distribution will be in favour of capital.

Figure 14: Enterprise Expansion Fund

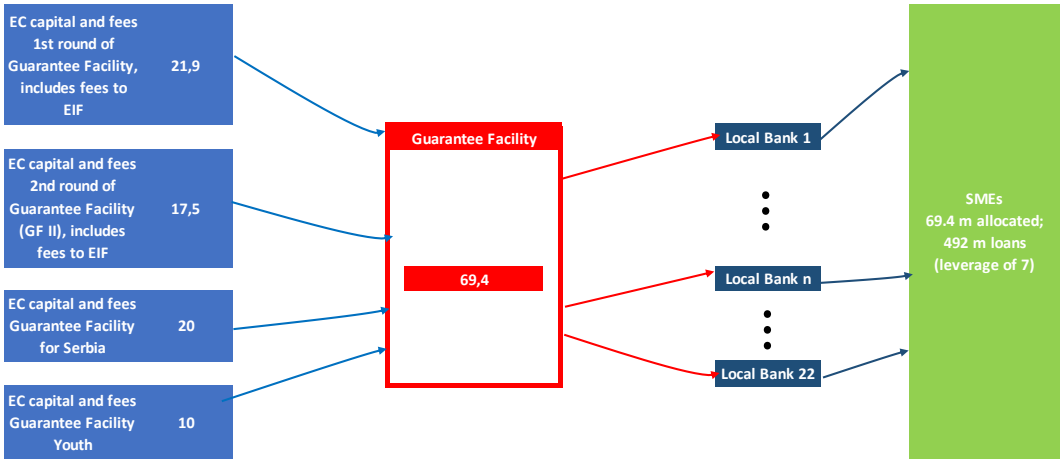


Guarantee Facility (GF)

The WB EDIF Guarantee Facility ("GF") provides a capped guarantee for SME loans via the participating commercial banks in the WB territories whereby such SMEs can obtain a loan to cover financing for investment and working capital of up to EUR 500k.

Impacts: The GF is funded with EUR 69.4 m coming from the EU budget. These were used to sign 22 operational guarantee agreements with the Financial Intermediaries building-up a loan portfolio amounting to EUR 403.3m, with an absorption rate of 86%. The GF financed 3,995 SMEs, which supported 62,170 jobs. In the case of the EUR 10 m for the Youth Employment and Training Facility (EYET) the guarantees support small loans that are linked to the employment or vocational training of young people and can be combined with EIB credit lines.

Figure 15: Guarantee Facility (GF)



The guarantee is financed 100% by an EU grant, which is therefore also a net contribution to profits on the distribution side. It has a leverage of 7 on loans, through which it supports also wages and employment.

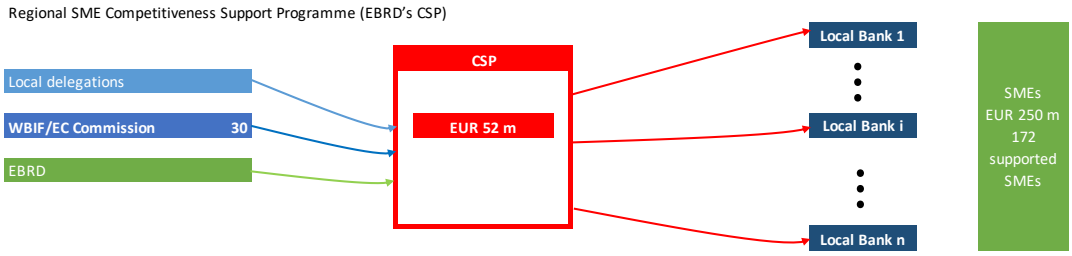
Regional SME Competitiveness Support Program (EBRD's CSP)

EBRD's Regional SME Competitiveness Support Program has the objective to improve SMEs' access to finance in order to introduce EU standards through the provision of financing and investment incentives as a grant element to the loan and increasing the awareness and knowledge of SMEs about the benefits of compliance with EU standards.

The program has three main components:

1) Dedicated credit lines to partner financial institutions ("PFIs") for on-lending to SMEs in support of investments that lead to improvement of their overall competitiveness and align them with the EU Priority Directives.
2) Investment incentives for SMEs Technical assistance provided by a project consultant to market, implement and monitor the Programme and
3) a verification consultant to verify the technical implementation of the investments by sub-borrowers before the incentives are paid.

Figure 16: Regional SME Competitiveness Support Program



Impact: Overall the program has attracted EUR 52m in funding that will generate loans for EUR 250m in support of 172 SMEs. The EU incentive represent 15% (EUR 30 m). EUR 178 m of credit lines have been provided, of which EUR 78 m supported by WBIF with circa 11.7 m grants. 100% of the beneficiaries are SMEs. Consultants checks consistency with EU agenda.

The program can be estimated to have a grant element of 15%, which is going mainly through profits. Given its overall leverage of 4, the program also impacts on wages and supports jobs.

Conclusions what criteria should be used in assessing the impact of financial instruments in support of the private sector in high-risk development contexts?

The conceptual instruments to address issues of market failures in financial markets are still relatively underdeveloped and do not permit to reach clear-cut conclusions when prices of financial assets diverge from their equilibrium value.

The analysis developed in this text tried to compensate for this lack of determinacy by drawing on practical experience gained from the use of financial instruments for the private sector in the Western Balkans markets, but it must keep necessarily a provisional character. The tentative conclusions reached are that:

a) Development policy outside the European Union, particularly in Accession and Neighbouring countries is likely to be implemented in high-risk environments and this fact and its consequences should be considered from the outset.
b) As a first implication, there is a presumption of pervasive uncertainty-related market failures that justify a policy intervention, including in the private sector.
c) The higher risk for SMEs in areas such as the Western Balkans is likely to stem from an insufficient capacity of the market to diversify away the social risk that for different reasons is likely to arise in such contexts.
d) In general, it could be assumed that the social risk is likely to account for a good portion of the differential risk premium paid by developing countries. In the Western Balkans this is likely to be of the order of 200-300 basis points. It is suggested that this differential be used as a pragmatic reference for the quantification of the market failure in the underdeveloped regions. Without asserting that it should be a lower or higher bound for such a market failure, in the light of the magnitude of the risks involved and our ignorance of them, it does not seem to be exaggerated to use this quantification as a reference in regions such as the Western Balkans.
e) The grant element and its inverse (the leverage) remain a valid criterion of reference for the choice of financial instruments for the private sector in development environments, as in high-risk environments investment is likely to be depressed.
f) Although the precise theoretical characterisation of equilibria prevailing in high-risk development contexts is unknown, it is almost certain that these equilibria cannot be perfectly competitive ones, and concrete situations must therefore be far from complying with the usual optimality properties. Development policy should take this fact fully into account. For instance, it implies that it is not possible to separate allocation from distribution and thus the financial instruments deployed should also be examined in terms of their distributional impact.
g) The question of distribution should be looked in aggregate terms, due to the “risk aggregation” issues tentatively sketched out in this text. Although further analysis is needed to clarify the conceptual causality chains, it is suggested that the impact of each financial instruments in terms of distribution between labour and capital be

examined, the argument being that the market failure is potentially of macroeconomic nature and that it is linked to distribution via the well-known channels established for instance in the post-Keynesian literature. These channels link growth and distribution in situations that depart from optimality because of risk-related market failures.

h) In terms of welfare micro-analysis, the “with” and “without” intervention scenario should be compared starting from a position far away from equilibrium. In such case, the criterion of total consumption generated by a project is still valid in principle (Lesourne, 1975), but it should be applied “out of equilibrium”, which implies that it cannot neglect distributive aspects and therefore it implies that accounting prices may diverge substantially from market prices, particularly for what concern the price of financial products.

Based on a review of the financial instruments deployed in the six Western Balkans countries from 2012 to 2020, it appears that each instrument has contributed to bring a positive impact on the economic conditions in the region, and addressed a specific market failure, but it is not possible to rank these results based on the grant element or on the distributional impacts. It is not possible to assess either if the grant element is bigger or smaller than the market failure addressed. Further research is thus needed to throw more light on these important subjects.

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