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Article

Prospective analysis of the SME sector of the Western Balkans

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Abstract:

The article offers an original perspective on the impacts of multilateral cooperation for the development of the private sector in complex economic environments. It examines the financial instruments deployed by several financing institutions in support of EU pre-accession policies for the six countries of the Western Balkans during the period 2014-2020 through a platform of cooperation for SMEs and the private sector called Enterprise Development and Innovation Facility (EDIF). It is based on research that aimed at evaluating the needs for external financial support to the region for the period 2021-2027. The core party of the study analyses a so far unexploited database comprising the financial accounts of all Serbian companies over the period 2009-18. The database documented the high dispersion and strong asymmetry in the distribution of the financial results of the private sector in Serbia, which is typical of a situation of high risk and uncertainty that prevails also in many other countries outside the European Union.

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This text offers an unusual perspective on the impact of the international cooperation policies and the relatively wide range of financial instruments deployed in support of the private sector of the Western Balkans (WB) and its innovation potential, a region engaged in a

* The text presents the results of a study on the *Prospective analysis of the SME sector in the Western Balkans* (Atanasijević et al., 2021) realised by a consortium composed of Jasna Atanasijević, Fausto Corradin, Domenico Sartore, Milica Uvalic, and Francesca Volo, in collaboration with Massimo Cingolani, that was completed in 2021. The author of the article warmly thanks the members of the consortium for their excellent work and for having authorised him to present its results in this article. The opinions expressed are personal and the author takes full responsibility for the content of the article. The countries covered in the study include Albania, Bosnia Herzegovina, Kosovo (under UN resolution 1244), Montenegro, North Macedonia, and Serbia. The study was financed by the Western Balkans Enterprise Development and Innovation Facility (WB EDIF*)*. Its authors are grateful for comments received from experts of several international institutions, academics and students and remain responsible for any error. Particular thanks for the help and support provided are due to Ms. Katarina Obradovic, Assistant Minister of the Serbian Ministry of Economy; Enrica Chiozza of the EC Commission; Wolfgang Schlaeger, previously at the EC and now at EBRD: Pier Luigi Gilibert, Gianluca Massimi, Romualdo Massa Bernucci, the late Miguel Morgado, and Christoph Kuhn of the EIB group; Claudio Viezzoli of EBRD; Alan Paic of OECD; Christoph Tiskens of KfW; the students of the master course of development finance at Sapienza University of Rome (Department of Statistical sciences). The final report of the study is available at GRETA (Gruppi di Ricerca Economica Teorica e Applicata, see https://www.greta.it/images/research/pdf/EIB_2021.pdf).

process of accession to the European Union (EU). Since the mid-1990s, the WB has had to address the double challenge of absorbing the economic shocks of the Yugoslav wars and the parallel start of the transition from a command to a market economy. This historical heritage still conditions the region's economic prospects because of the widespread perception that it entails a high risk, which delays the development of its private sector. The results of this research can be of interest for international cooperation policies in favour of the private sector of other development and transition countries, notably those that have been suffering from conflicts, and in particular Ukraine.

The study exploited for the first time a unique database containing the balance sheets of all registered Serbian enterprises during the period 2009-18. The database showed the high dispersion in the financial outcomes of the private sector in a key country of the region and documented factually its high risks, and the substantial uncertainty and ambiguity that characterizes its complex policy environment.

Starting from 2011, the European Commission (EC), a group of international financial institutions and the beneficiary countries of the region established an original platform for its small and medium sized enterprises (SME) called the Western Balkans Enterprise Development and Innovation Facility (WB EDIF) to cooperate in promoting the development of the private sector in the Western Balkans, with particular emphasis on its innovation capacity. This facility deployed a variety of financial products and technical assistance services during the period 2014-2020.[1] The study presented here aims to assess the needs for financing, advisory and technical assistance for income and dimensional growth of the SMEs and the private sector of the WB during the period 2021-27, based on a detailed review of the experience gained from 2014 to 2020.[2]

The first section of the article presents the conceptual framework taken as a reference in the study, which emphasizes profits as the main variable through which external grant support exerts its effects on the private sector and can influence its investment. Because profits and investment are linked to risks and uncertainty, the empirical analysis in the following two sections pays particular attention to these aspects and the associated technical assistance needs. The second section outlines the main characteristics of the SME sector of the Western Balkans. The following section presents a detailed analysis of the financial accounts of Serbian private sector non-financial companies for the period 2009-2018, which represents the most significant and original empirical result of the study. The fourth section describes the financial instruments deployed by WB EDIF during the period 2014-20 in the risky policy environment described in the previous sections and assesses their likely impact. On this basis, an estimate of the external grant support needed during the period 2021-2027 is provided.

[1] See WB EDIF. The main financial institutions involved in WB EDIF were the European Commission, the European Bank for Reconstruction and Development (EBRD), the European Investment Bank Group (EIB), mainly through the European Investment Fund (EIF), the OECD, the World Bank Group, KFW (Development Bank and DEG), the CDP group of the Austrian Development Bank. The beneficiary countries of the Western Balkans also contributed financially to the platform, as did Italy, Germany and Austria (see WB EDIF, 2020, p. 3,).

[2] The choice of the period reflects the medium-term horizon of the financial perspectives of EU budgetary policy, which follows a 7-year cycle. The study looked at the effectiveness of the financial instruments deployed in the past, both from a macro and a microeconomic perspective. The prospective analysis aimed at assessing the credit and financial policy instruments to be allocated by the EU for the development of the private sector of the region in preparation for its possible accession to the EU, in terms of both financial need and elimination of non-financial obstacles.

1. The conceptual framework

It is often asserted that public support to private sector investment should be justified in terms of market failure. For instance, in Europe the regulatory environment recently introduced a requirement for "an analysis of the market failure" to justify the use of public funds for development purposes (European Commission, 2021, p. 42). As argued in more detail in Atanasijević et al. (2021, Appendix A), profits represent a key variable to assess market failure and in a very risky environment the latter is not always straightforward to define. Assuming that market failures are identifiable and can be quantified, the support provided to a private sector project should be lower than or equal to the monetary value of the market failure it is supposed to correct, and this requires precisely defining the grant element in the support provided.[3] When this is done, it is possible to rank the various instruments deployed to develop private sector investment based on their cost in terms of grants used and their impact in terms of investment leveraged. As developed below, due to the ambiguity and riskiness of the environment prevailing in the Western Balkans, which is likely to prevail in other development and transition regions, such a mechanical calculation would not be very meaningful. Nonetheless, a judgment on the effectiveness of the instruments deployed should still be based on their assessed costs and benefits, and notably on their impact on private sector profits and investment, knowing, however, that there is a substantial margin of uncertainty on their precise quantification.

1.1. Market failure and its implications

When there is a market failure, the market price of a new asset does not reflect its social value, and the cash return of the investment calculated at market prices is often below the target rate of return of the investor, for which reasons a socially useful investment is often not undertaken. Market failures in investment and financing of SMEs could be caused by the disincentive to finance investment demand, the lack of information and knowledge of the risks involved, and obstacles to competition, as well as barriers to accessing and expanding the market for products and services. More generally, a market failure may result from an externality, the presence of a public or merit good in insufficient supply, a macroeconomic market failure, or any other cause.

In general, there is a presumption of market failure when a market operates in non-competitive conditions. A competitive situation is traditionally associated with the absence of extra-profits above the normal remuneration of capital and the absence of barriers to entry. Under these circumstances, a single price would prevail in the market for a homogenous product and would tend to equal the marginal cost. From the logical viewpoint, the following conditions are essentially equivalent: i) absence of market failure; ii) prevalence of the law of one price with price equal to marginal cost; and, iii) no barriers to entry.[4]

In risky contexts, information is poor and capital markets will likely fail to provide homogenous pricing for the risk of a single investor or for one of its investment projects, and this

[3] The grant element is either the grant itself (the net present value of the subsidy provided) or its equivalent, i.e., the present value of the discounted cash flows transferred corrected for risk (see below and notably OECD, 2021). This is a relatively straightforward extension of Pigou's (1932) classical welfare analysis and has been used as a reference, for instance, for the determination of the grant support by the EU Structural and Cohesion Funds (see Mairate and Angelini, 2007, quoted in Cingolani, 2021, p. 63).

[4] The authors are grateful to the anonymous reviewers for correcting an error in the previous version of the text.

is likely to result in increased risk premia (Jouini, 2019). Uncertainty could potentially be so great that it does not allow the existence of a single price because probabilistic calculus cannot be applied (Casellina and Pandolfo, 2018). Risk itself can be the cause of a market failure when it prevents the definition of a single price as the focal equilibrium point at which the markets clear, a situation that Guesnerie (2013) has called an expectational market failure. One should expect that, in underdeveloped markets, where risk is pervasive, market failures would prevent the law of one price from holding and different prices exceeding differences in marginal costs would prevail for the same product, depending, for instance, on sector or location. The same would happen for the associated profit rates. The level of aggregation of risks is an important factor of the analysis. Some risks may compensate each other but others not, leaving a residual "macroeconomic" risk that can be differentiated in space. For instance, in the development context, the typical aggregate market failure is that investment is too low. One reason along Keynesian and Kalekian lines (Keynes, 1921 and 1936; Kalecki 1937 and 1943) is that private investors do not see a sufficient probability of profit to be confident to invest and thus create the demand that would validate their profit targets. In these situations, not only will the investment be low with respect to potential savings but rents could be accumulating somewhere else in the economy because prices exceed their market-clearing levels. Kalecki's approach, which was further developed by Sylos Labini ([1962] 1969, part III), provides the link between microeconomic uncompetitive markets, in which prices diverge from marginal costs and where such deviations are accumulated as extra-profits (or rents), and macroeconomic market failures, where these deviations result in too low a level of investment or too high a level of unemployment (cf. Atanasijević et al., 2021, Appendix A.1).

One can provisionally conclude that, whenever the profit rates are high, for instance in terms of excess above the interest rate,[5] or have a wide dispersion characterized by several modes,[6] there is a presumption of a market failure (Sylos Labini, 2004). It might be useful to recall some policy implications of market failure established in the literature that are sometimes neglected.

- If more than one market failure is present, there is no reason to think that, by eliminating one of them, the conditions for the "first best" optimum would be re-established. This is the standard second-best theorem in the original formulation of Lipsey and Lancaster (1956). It limits the systematic mechanical use of Pigou's externality approach at the microeconomic level.
- Outside of competitive conditions, it is not possible to separate allocation from distribution, which in principle would require analysing financial instruments also in terms of their distributional impact, which is typically not done. The argument "increase the cake first and then distribute it" does not necessarily apply. This point is not frequently emphasized, but it is implicit in Samuelson (1954, 1955) and Lesourne (1975). The reason is intuitive when one considers the link between competitive prices and maximum efficiency. In a competitive equilibrium, all opportunities to produce more with the existing resources have been exhausted. If prices and distribution change along the equilibrium maximum efficiency production possibilities frontier, this cannot improve allocation, which is already optimal. On the contrary, below maximum efficiency, a change in distribution would likely be associated with a gain or loss in allocation, as the economy moves closer or farther from the frontier of production possibilities.

[5] Taken as indicative of all passive interest rates. For instance, for banks it could be the excess of lending rates over deposit rates.

[6] Statistically, the mode is the value that appears more frequently in a distribution. If there are several modes, the distribution can be seen as being made up of several groups clustering around different "modal" values.

– Extending this idea to dynamics, one should also consider technological change. A small investment project would have a marginal impact on the economy and would therefore not modify its technology, represented by the production possibility frontier, whereas an organic policy (or a very large investment) can bring a structural change and move the technology-possibility frontier outwards. Market failure should thus be discussed from a systemic viewpoint in its macroeconomic dimension too.

1.2. The grant element

If one consolidates an economy into two aggregate sectors – public and private – any net transfer payment from the public to the private sector should be considered as a grant, and that grant contribution would logically represent an addition to the financial surplus of the private sector, i.e., a contribution to its profits. Whereas it is rather straightforward to calculate the grant element in a transfer, as it is equal to the transfer itself, it is much less obvious to define the grant in the cash flows associated with a given financial product.

Concerning development finance products, for the purposes of reporting on official development assistance (ODA), the OECD's Development Assistance Committee (DAC) developed the concepts of grant equivalent (expressed as a monetary value) and grant element (expressed as a % of the present value of the financing). Both aim at estimating the gift portion of a particular ODA financing:

> For example, grants have a grant element of 100% as they are fully provided as "gifts". By contrast, a loan offered at market terms has a grant element of 0%. In short, the grant equivalent is an estimate, at today's value of money, of how much is being given away over the life of a financial transaction, compared with a transaction at market terms. The grant equivalent is the grant element multiplied by the amount of money extended (OECD, 2021).

For a loan with a fixed interest rate, the grant equivalent is the difference between the face value of the loan and the present value of its cash flows, discounted at the reference market rate. If the interest rate of the loan is equal to the market rate, this difference is zero and the loan is considered to be granted at market conditions. If it is positive, the grant equivalent is the present value of the stream of gifts provided over the life of the instrument (OECD, 2021). In principle, the approach used for fixed-rate loans could be applied to more complex financial products, although there is not much consensus on how to do it in practice.

To conclude, it is standard international practice that financial instruments for the development of the private sector should be deployed so as to better address market failures. The latter are not easy to quantify, but in principle they could be estimated. If the value of the grant element (or of the grant equivalent) is known, as is the case for WB EDIF products, the impact of the grant depends on the investment mobilised or leveraged, which in principle can be estimated. As a first approximation, the grant equivalent should be taken as the direct contribution to the private sector profits, which means that the grant element is the percentage addition to the overall private sector's profit rate. A small model developing this idea in a partial equilibrium context was provided in Cingolani (2021) and used in the study.

2. Overview of the WB economies

Starting from the 1960s, a considerable debate developed on the relative merits of the system of self-managed socialism of ex-Yugoslavia compared to that of other command economies.[7] Whatever the relative merits of the system, one can estimate that, at the beginning of the transition, ex-Yugoslavia had reached a more advanced level of economic development than countries such as Romania or Bulgaria. According to the World Bank's 1992 World Development Report, GDP per capita in ex-Yugoslavia in 1990 is estimated at 97% that of Czechoslovakia at current prices, and above those of Hungary (89%),[8] Bulgaria (72%), Poland (62%), and Romania (52%).

Table 1 – *GDP per capita in current USD*

	1990	1995	2000	2005	2010	2015	2020	2022
ex-Yugoslavia	3,060	–	–	–	–	–	–	–
Serbia	2,754	2,207	915	3,720	5,735	5,589	7,734	9,394
Romania	1,648	1,650	1,660	4,618	8,398	8,977	13,047	15,892
Bulgaria	2,367	2,259	1,621	3,900	6,863	7,081	10,153	13,772
ex-Yugoslavia	186%	–	–	–	–	–	–	–
Serbia	167%	134%	55%	81%	68%	62%	59%	59%
Romania	100%	100%	100%	100%	100%	100%	100%	100%
Bulgaria	144%	137%	98%	84%	82%	79%	78%	87%

Source: World Bank (1992) for year 1990 and *World Development Indicators* for subsequent years (available on the World Bank's website).

Still, in 1995, the GDP per capita of Serbia, the main country of the WB region, was above that of Romania (134%) and close to that of Bulgaria (137%). By looking at the evolution of relative GDP per head one can see that, overall, the 1990s were a decade of political and economic instability for the region and, by 2000, Serbian GDP per capita had collapsed to some 55% of that of Romania and Bulgaria. After the end of the Kosovo war in mid-1999, the international community, led by the European Union, elaborated a new long-term strategy for the region to sustain its stabilization, economic recovery, and future integration into the EU. A first wave of reforms was approved that included price liberalization and reforms of the trade and foreign exchange system. These were accompanied by trade liberalizations and extensive privatisation of enterprises, which contributed to a period of rapid catching up in the years 2000-2007. GDP per capita of Serbia recovered at more than 80% that of Romania and Bulgaria in 2005, but these favourable trends were brought to a halt by the financial crisis of 2008, which led to a decade of low growth. In 2010, GDP per head in Serbia fell to 68% that of

[7] See, for instance, Vanek (1963); Vanek and Jovicic (1975); and Estrin et al. (1988).
[8] In that year, which is the last for which international statistics were published for the whole of Yugoslavia before its break-up, GDP per head in Serbia can be estimated at 88% that of Czechoslovakia. This is because around 1990 the GDP per capita of Serbia was about 90% of the Yugoslav average as confirmed by Flaherty (1988) and Žižmond (1992). This is logical, since until then Yugoslavia included the richer regions of Slovenia and Croatia.

Romania and, in 2015, to 62%. At the end of the 2010s, the region was hit by the shock of the COVID-19 pandemic; by 2022, GDP per head of Serbia had fallen to 59% that of Romania and remained significantly below that of Bulgaria. In the last two decades, the Western Balkans was outperformed by countries that were behind it before transition but that meanwhile entered the European Union. This is the symptom of a systemic transition failure that calls for substantial and structural social and economic change, which requires in turn the development of a new and more innovative economic base of SMEs as a pre-condition for the recovery of the emergence of a healthy private sector.

2.1. Causes of the poor overall performance of the Western Balkans

As analysed in Atanasijević et al. (2021),[9] several factors explain these overall disappointing developments.

1. *Delays in market-oriented economic reforms*. By 2008, the Western Balkans had completed some of the most important economic and institutional reforms of the transition to a market economy, but progress had been slower in areas such as large-scale privatisation, enterprise restructuring, competition policy, securities markets, non-bank financial institutions, and infrastructure reforms.
2. *Strong effects of the global financial and economic crisis*. The increasing dependence of the Western Balkan economies on the EU made the region increasingly vulnerable to external shocks. From 2008 onwards, there was a drastic decline in foreign capital inflows, including foreign direct investment (which declined by some 40-60%), workers' remittances, bank loans, and donors' foreign assistance.
3. *Structural economic weaknesses*. The Western Balkan countries have traditionally had *exceptionally high unemployment* and low employment rates, particularly for young people. Part of the workforce is employed in the informal sector, which accounts for 20-40% of GDP, and there is a significant brain drain. The phenomenon of jobless growth has been much more pronounced in the Western Balkans in the 2000s than in the Central East European countries a decade earlier. These problems were aggravated by the strong skills mismatch. Another main structural weakness has traditionally been the *external imbalance*. Coupled with a weak export capacity that kept the current account in structural deficit, rent-seeking foreign direct investment went to non-tradable services sectors that are most financially profitable, without spill-overs on value-added, employment and exports.
4. The strong process of *deindustrialization* was too quick in the region and increased its vulnerability.
5. *Poor institutional environment*. Firms in the Western Balkans still face specific administrative barriers due to the unfriendly business environment, while the institutional framework for policy design and implementation remains weak.
6. *Financial sector reforms*. The banking sector was restructured through partial privatisation and the opening to foreign banks, contributing to a significant inflow of financial capital that improved its efficiency and supported the economic recovery during 2001-2008, but increased the vulnerability of the region to external shocks such as the financial crisis of 2008.

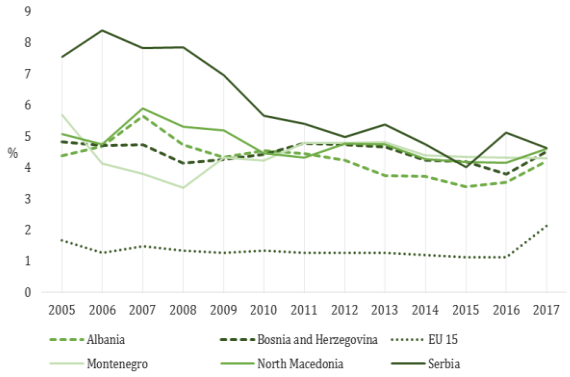
[9] See also Bartlett and Hoggett (1996); Bartlett and Bukvič (2002); Bartlett et al., 2002; Bartlett, 2003; Uvalic (2003 and 2010); Bartlett (2012); Vartlett and Uvalic (2013); Estrin and Uvalic (2014); Bartlett et al. (2016); Berthomieu et al. (2017); Damiani and Uvalic (2018); Uvalic et al. (2020).

2.2. The financial systems of the Western Balkans and the role of SMEs

Today, the financial systems of the Western Balkans are bank-centric. They are dominated by foreign banks, with the top five banks representing about 80% of the banking sector in Albania, Montenegro, and North Macedonia. Domestic credit to the private sector is still relatively low, ranging from under 40% of GDP in Albania to about 60% in Bosnia and Herzegovina, compared to some 100% in the EU15. Non-performing loans (NPLs) are higher than in the EU15. A significant indicator of the underdevelopment and inefficiency of the banking sector are the high interest margins of banks as a percentage of total earning assets. Despite an improvement over the past decade, in 2017 net interest margins were still around 5% in most WB countries, more than double those in the EU15. Another strong indication of an inefficient financial market unable to diversify away high risk is the high level of collateral required by SMEs to obtain a loan.

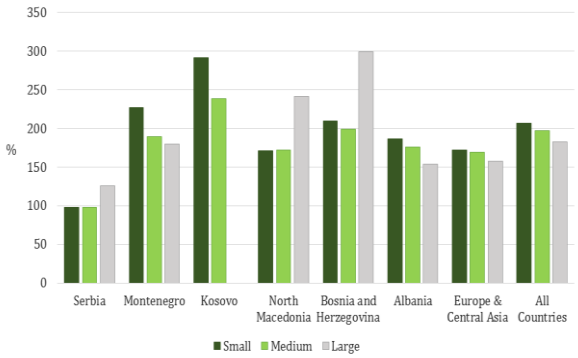
Figure 1 – *Indicators of financial market efficiency in the WB region*

Banks net interest margins (%)



Source: World Bank Global financial development indicators

Value of collateral needed for a loan (% of the loan amount)



Note: All countries bars refer to the average for latest available survey data for all 146 surveyed countries in the period 2001-2020.
Source: Enterprise Surveys (2019), The World Bank, http://www.enterprisesurveys.org

In Serbia, whose productive sector is examined in more detail in the next section, as of the end of the third quarter of 2020 the banking sector included 26 banks with total assets of 38.3 billion euros; five of these had assets above 3bn, representing together 53% of the total. Foreign-owned banks control around three quarters of banking system assets. SMEs receive up to 70% of new corporate loans. The cost of borrowing for SMEs has declined recently, but it is still above that of large companies by some 200 basis points (bp). It is difficult to estimate how much of this difference is actuarial risk and how much is due to market failure.

The high risks prevailing in the region can be inferred also from the relatively high country-risk premia requested for sovereign lending by the international financial markets, which are of the order of 150-350 bp. The sovereign risk premia are generally a floor for the private sector risk premia in the same countries, and, for domestic lending to SMEs, some

further 300-700 bp can easily be added. This high cost of credit obviously discourages SMEs, and only 20% of SMEs use banks to finance investments.

Due to the still low amount of loans extended to the private sector, the remaining relatively high bank interest margins, and the high degree of non-performing loans, the private sector of the Western Balkans still faces substantial financial constraints. Strong investment is needed to develop the region (Berthomieu et al., 2017), in particular in the private sector and in SMEs, which are its backbone.

SMEs account for 64% of employment in Bosnia and Herzegovina and 66% in Serbia (the EU28 average is 66.5%), but these shares are substantially higher in North Macedonia (75%), Kosovo (76%), Albania (77%) and Montenegro (80%). Compared to the EU28, SMEs account for a higher share of value-added. Other indicators, such as SME contribution to exports, vary from 39% in Serbia to 75% in Montenegro and over 97% in Kosovo. Some sectors of the economy are particularly prominent in terms of potential for high-growing SMEs: e.g., machines and equipment, IT, gaming, and audio-visual production in Serbia; food industry and some services, including tourism, in other WB economies.

Apart from financial barriers, the most significant institutional barriers to SME growth that contribute to increasing the risks are inadequate property rights, high administrative costs, high costs of obtaining licences, complicated procedures for registering a company (determining the need to pay bribes to inspectors), and high costs of getting basic infrastructure, electricity, or construction permits. Other major institutional constraints are political networks and ties, which often link banking policies to the state and larger enterprises (see Atanasijević et al., 2021, §3.2.4, pp. 41-51 for more details and references).

3. Empirical analysis of the Serbian SMEs, 2009-18

With a GDP of about 46 billion euros in 2020 and a population of about 7.1 million, the Serbian economy represents almost half of the overall Western Balkans market. Serbia is the largest country in the Western Balkans in terms of gross domestic product, volume of foreign trade, size of financial market, population and territory, and it is sufficiently diversified to include regions comparable to any other WB countries; therefore, current challenges faced by the Serbian SMEs can offer insights for other Western Balkan countries.

3.1. Descriptive analysis

Businesses in Serbia are organized as enterprises (legal entities) and entrepreneurs (physical persons). A limited liability company is the dominant form of enterprise. There were about 100,000 registered enterprises and about 280,000 registered entrepreneurs in 2018 (SORS, *Report on Business Sector*, 2018). Entrepreneurs, contrary to enterprises, are not obliged to submit their balance sheets (financial reports) to the Serbian Business Registers Agency. About 10% of the total registered business entities are newly registered each year, and about the same percentage is closed.

Serbian enterprises are very concentrated in a few sectors: Manufacturing, Energy, Wholesale and Retail Trade, and Information and Communication. Manufacturing, Energy, and Communication have high productivity, with a share of turnover greater or equal to the share

of employment and a share of gross operating surplus higher than both the share of turnover and that of employment. Wholesale and Retail Trade have low productivity. They stand out for representing 37% of turnover, 18% of gross operating surplus and 23% of employment. There is thus a clear heterogeneity among Serbian enterprises.

Table 2 – *Business sector statistics for enterprises, 2018*

Industry NACE Rev 2.	Number of enterprises		Turnover (Million EUR)		Gross Operating Surplus (Million EUR)		Number of persons employed	
		%		%		%		%
Total	**87407**	**100.0**	**87958**	**100.0**	**7828**	**100.0**	**1161577**	**100.0**
B – Mining and Quarrying	315	0.4	796	0.9	64	0.8	15386	1.3
C – Manufacturing	15831	18.1	28502	32.4	2823	36.1	377984	32.5
D – Electricity, Gas, Steam and Air Conditioning Supply	781	0.9	5103	5.8	807	10.3	39601	3.4
E – Water Supply; Sewerage, Waste Management and Remediation Activities	800	0.9	1077	1.2	130	1.7	37424	3.2
F – Construction	7562	8.7	5977	6.8	585	7.5	78006	6.7
G – Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	30591	35.0	32616	37.1	1449	18.5	262438	22.6
H – Transportation and Storage	5942	6.8	4986	5.7	479	6.1	103874	8.9
I – Accommodation and Food Service Activities	3414	3.9	706	0.8	64	0.8	30534	2.6
J – Information and Communication	4935	5.6	3785	4.3	824	105	56796	4.9
L – Real Estate Activities	1403	1.6	240	0.3	126	1.6	6651	0.6
M – Professional, Scientific, and Technical Activities	11976	13.7	2863	3.3	309	4.0	74923	6.5
N – Administrative and Support Service Activities	3390	3.9	1235	1.4	160	2.0	75961	6.5
S – Other Service Activities	467	0.5	73	0.1	8	0.1	1999	0.2

Source: Statistical Office of the Republic of Serbia (SORS.)

As in other WB countries, SMEs are the main backbone of the economy. SMEs in Serbia provide 60% of total employment and turnover and nearly half of value-added (GDP).

Table 3 – *Business sector statistics, by enterprise size, 2018*

	Micro (0-9 employees)	Small (10-49 employees)	Medium (50-249 employees)	Large (250 and more employees)	Total
Number of enterprises	73663	10778	2430	536	87407
	84%	*12%*	*3%*	*1%*	*100%*
Number of persons employed	217305	216456	252191	475625	1161577
	19%	*19%*	*22%*	*41%*	*100%*
Turnover, by classes of persons employed, in million euros	12372	18911	20774	35902	87958
	14%	*21%*	*24%*	*41%*	*100%*
Value-added, in million euros	1776	3209	4220	8883	18088
	10%	*18%*	*23%*	*49%*	*100%*

Source: Statistical office of the Republic of Serbia (SORS).

An important feature that is relevant for the interpretation of financial micro-data is the relatively important role of the shadow economy in Serbia, which is common also to the rest of the Western Balkans region. It mostly consists of smaller firms, entrepreneurs, and farmers. According to a survey conducted in 2017, based on the perception of interviewed enterprises and entrepreneurs about the practice of competitors in the shadow economy, the level of the shadow economy in Serbia is estimated at about 15.4% of GDP in 2017 (see Krstić and Radulović, 2018). The dominant form of shadow economy activity consists of undeclared labour costs, implying that salaries are paid entirely or partially in cash. The other form of grey economic activity is undeclared profit. According to the survey, out of 100 dinars of unregistered transactions, about 62 dinars relate to undeclared labour costs, while 38 dinars relate to undeclared profit. These phenomena reflect the underdeveloped system of firms' financial control by the authorities, permitting understatements of revenues and expenditures in their financial reports. Such practices are more frequent among entrepreneurs than among enterprises. Also, around 17.2% of Serbian firms are not registered at all and perform their activities illegally. According to the European Commission, the proportion of undeclared work in Serbia was 18.2% at the end of 2019 (European Commission, 2020). These findings on the important role of the shadow economy are confirmed by the Serbian *Labour Force Survey*. Out of 2.4 million employed persons in 2020 (according to the ILO definition), some 15% are informally employed, most of them in agriculture (307,000 out of 431,000 people).

The rest of this section presents a detailed analysis of the results of an investigation into an anonymized firm level dataset used for the national accounts by the Statistical Office of the Republic of Serbia. The data comprised yearly balance sheet and income statements for all Serbian enterprises from 2009 to 2018.10 The information considered included the 36 positions reported in table A1 in the appendix, with which 19 indicators listed in table 4 were constructed.

Of the 59,884 firms considered in the year 2018, 88.1% had private legal status and generated 75% of the total Operating Income (*OI*). Social enterprises accounted for 8.6% and

[10] The study used data of 59,884 firms of the 64,962 provided; it excluded 4,840 firms with "Non-Available" data in the Employees or Months of Activity section and 238 firms of the banking and insurance sector.

generated 5.4% of the *OI*. State-owned firms accounted for 1% and generated 9.3% of the *OI*. Cooperatives accounted for 0.8% and generated 1.4% of the *OI*; and mixed firms accounted for 0.4% and generated 8.8% of the *OI*.

Table 4 – *Indicators and acronyms used in the empirical analysis*

	Acronyms	**Indicators**
1.	CC/StL	Cash and Cash equivalent/Short Term Liabilities
2.	$EbT\%$	Profit before tax/Operating Income
3.	EbT	Profit before tax
4.	$Employees$	Average Number of Employees
5.	$Inventory\ turnover$	Inventories/Operating Income
6.	$Liab\%$	(Short+Long term Liabilities)/Total Assets
7.	$Liabilities$	Short+Long term Liabilities
8.	$LLiab\%$	Long term Liabilities/Total Assets
9.	Mu/OI	Mark-up/Operating Income
10.	Mu	Mark-up, Operating Income–Cost of Goods sold
11.	OI/E	Operating Income/Average Number of Employees
12.	OI	Operating Income
13.	$OP\%$	Operating Profit/Operating Income
14.	OP	Operating Profit
15.	ROE	Return on Equity
16.	ROI	Return on Investment
17.	$SLiab\%$	Short term Liabilities/Total Assets
18.	TA	Total Assets
19.	WE	Wages/Employees

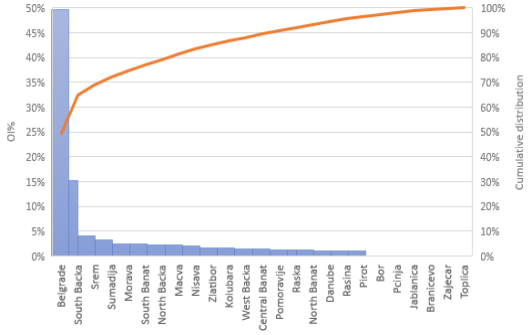
In general, the original dataset contained many inconsistencies, particularly for the years preceding the accounting reform of 2014. Not only was a large amount of data missing but, in a significant number of years, the relationships among variables did not respect the general accounting principles, even though accuracy increased from 2014. This confirms that the environment is one of very imperfect information, which is both a cause and an effect of the high level of uncertainty; therefore, significant resources must be devoted to improving the financial information, including through training. Meanwhile, because this is the only information available, it must be exploited. For this reason, before proceeding with the analysis, the dataset was carefully cleaned through a detailed examination, which did not aim at eliminating the outliers but at reaching a minimal initial data consistency. As a result, out of the initial 64,962 enterprises with a turnover above one million dinars in the last year available, 4,840 enterprises were eliminated because they did not have available data in the Employees or Months of Activity section and another 238 were excluded because they belonged to the Banking and Insurance sector. As discussed below, the econometric techniques further applied to the cleaned dataset allowed for the extraction of meaningful policy-relevant information.

The cleaned dataset shows that there is a strong concentration and polarisation of economic activity at the geographical level. In 2018, about 50% of the Operating Income was produced in the region of Belgrade, followed by the South Bačka region, which accounts for

15% of the total. All of the other 23 districts do not exceed 5% and, together, cover only about 35% of the total Operating Income. The analysis of the relationship between the percentage of people employed in a district and the wage per employee in million dinars shows a very different situation in the two bigger districts in 2018. In Belgrade, firms reach the higher Operating Income, the higher percentage of employees and, coherently, an annual wage per employee over the threshold of 2 million dinars. In South Bačka, even though it is the second district for Operating Income and employees, wages seem to be lower; there are five smaller districts, headed by Šumadija, that appear to remunerate their workers better.

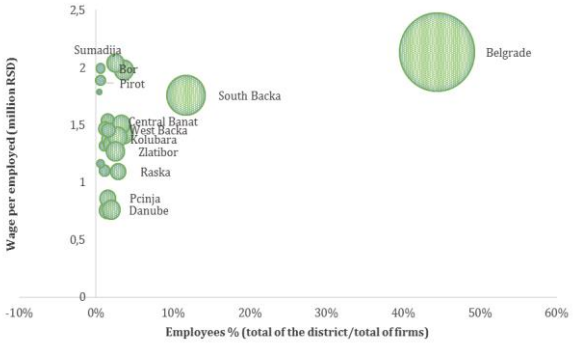
Figure 2 – *Operating Income (OI) and employees and wages per district*

Operating Income % per districts in 2018



Note: total of the district/total of firms – %; in orange the cumulated distribution.
Source: GRETA elaborations.

Relationship between number of employees % and wage per employee in 2018



Note: dimension of bubbles depends on the Operating Income %.
Source: GRETA elaborations.

3.2. SME financial expenses

The first investigation done with the dataset concerned the financial expenses of SMEs. The purpose was to investigate if there was a relation between the ratio of financial expenses paid by companies on their liabilities (Financial Expenses to Total Liabilities ratio – FE/Li) and the firm's financial performance as measured by:

– The Operating Income (*OI*).
– The ratio of Short+Long term Liabilities over Total Assets (*LIAB*%).
– The ratio of Operating Profit/Operating Income (*OP*%).

The sample was divided into six quantiles according to the size of *OI*.[11] A graphical and a regression analyses were done which gave convergent conclusions. The graphical analysis showed that:

[11] The six classes were: a) $OI \leq q_{5\%}$; b) $q_{5\%} < OI \leq q_{25\%}$; c) $q_{25\%} < OI \leq q_{50\%}$; d) $q_{50\%} < OI \leq q_{75\%}$; e) $q_{75\%} < OI \leq q_{95\%}$; and f) $OI \geq q_{95\%}$.

- The classes characterised by lower *OI* are less profitable, but they exhibit high Liabilities to Total Asset ratios. This is coherent if we read this indicator as a measure of financial risk, but it suggests also that these firms can have high liabilities, even if they seem not to be able to repay them.
- The financial costs that firms characterised by lower *OI* seem to face for the operative management are surprisingly high, even if they improve over time. This could mean that these firms need to be better audited or that they were subjected to a higher credit crunch effect.
- Firms belonging to a different class of turnover faced a convergent and declining Financial Expenses to Liabilities ratio, whereas their profitability (measured by the Profit before tax to *OI* ratio) did not converge.

For each class, the following regression was implemented where the explanatory variables appear lagged twice:

$$\frac{FE}{Li}_{i,t} = \alpha_i + \beta_{i,1}OI_{i,t} + \beta_{i,2}OI_{i,t-1} + \beta_{i,3}OI_{i,t-2} + \beta_{i,4}LIAB\%_{i,t} + \beta_{i,5}LIAB\%_{i,t-1} + \beta_{i,6}LIAB\%_{i,t-2} + \beta_{i,7}OP\%_{i,t} + \beta_{i,8}OP\%_{i,t-1} + \beta_{i,9}OP\%_{i,t-2} + \varepsilon_{i,t}$$

The results of the regression are summarised in the following table, where only significant parameters are reported.

Table 5 – *Regression results for SME financial expenses*

Class i-th	*Constant*	$OI_{i,t}$	$OI_{i,t-1}$	$OI_{i,t-2}$	$Liab\%_{i,t}$	$Liab\%_{i,t-1}$	$Liab\%_{i,t-2}$	$OP\%_{i,t}$	$OP\%_{i,t-1}$	$OP\%_{i,t-2}$	**Adj. R^2**
ClassQ1	0.067 (112.713)***										0.000
ClassQ2	0.069 (357.427)***										0.000
ClassQ3	0.124 (1.195)									0.039 (7.645)***	0.005
ClassQ4	−0.337 (1.195)	−0.032 (−27.331)***	0.072 (43.474)***	−0.037 (−8.434)***				−0.006 (−16.939)***	0.000 (−2.070)**		0.129
ClassQ5	0.062 (6.524)***						−0.028 (−2.789)**				0.001
ClassQ6	0.041 (1.340)	0.000 (5.623)***	0.000 (−5.541)***		0.318 (4.156)***	−0.313 (−4.109)***				0.000 (2.578)**	0.016

Source: GRETA elaborations.

The regression confirmed the graphical results that the Financial Expenses to Liabilities ratio, interpreted as a proxy of the interest rate firms pay to borrow from creditors, is unrelated to both the firm's financial risk and profit rate. This may be due to the fact that firms guarantee their debt with properties or have relationships of trust with the creditors, but it also means that creditors' interest rates are sticky and inelastic to changes in profit rates. These findings lead to two main conclusions. The general reduction of the Financial Expenses to Liabilities ratio is a consequence of the reduction of key policy rates of the National Bank of Serbia between 2009 and 2018. The second implication is that, based on the graphical and statistical analyses, the Serbian market of SMEs, considering *OI* as a classification criterion, is not competitive. Only classes with higher *OI* show a convergent Profit before tax to Operating Income ratio.

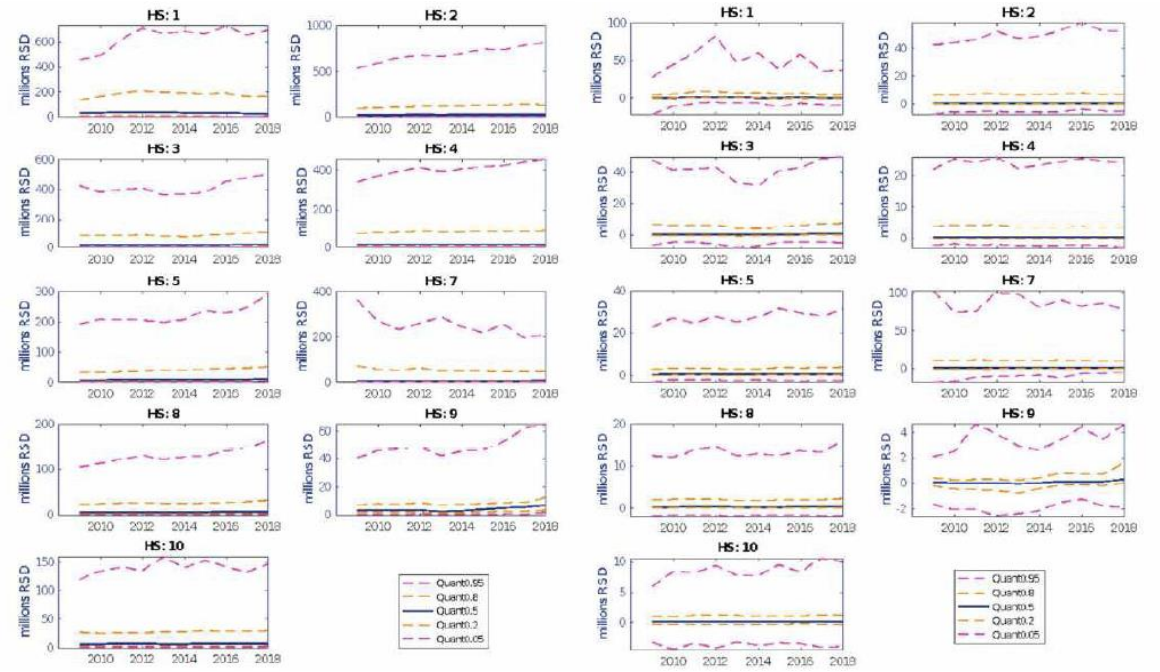
3.3. Development factors by sectors

The previous section has documented that the Serbian private sector does not operate under competitive conditions, which implies that there are no clear references for selecting generically those actions that deserve to be supported by EU policy. In this section the question is approached from the sectoral viewpoint. First, the sectors that can be identified as being more promising for the future are identified; and then these sectors are investigated with econometric techniques to extract from the balance sheets of the selected companies' information that can be of interest for economic policy. The analysis has been carried out both at a macro level, for the 9 High-Level identification Sectors (HS), and at a micro level, for the 85 non-banking and insurance sectors (S) of NACE Rev. 2 classification, as per table A2 in the appendix.[12]

For each of the main sectors, a descriptive analysis was done to track the change over time of the empirical distributions in terms of their right or left asymmetry. The distribution for each variable was divided into the same six quintiles as before[13] and the time behaviour of the six quintiles was examined according to the following interpretative criterion (see figure A1 in the appendix):

When:		
	$q_{50\%} - q_{20\%} > q_{80\%} - q_{50\%}$	There is asymmetry to the left of the distribution
	$q_{50\%} - q_{20\%} < q_{80\%} - q_{50\%}$	There is asymmetry to the right of the distribution
	$q_{50\%} - q_{20\%} = q_{80\%} - q_{50\%}$	There is symmetry of the distribution

Figure 3 – *Evolution of the six quantiles for each HS for OI (left) and operating profit (right):*



[12] In the dataset there are: 9 High Level identification Sectors (HS); 19 Main Sectors (MS) corresponding to the first NACE digit; and 85 Sectors (S) corresponding to the first two NACE digits.

[13] The six class were: a) $OI \leq q_{5\%}$; b) $q_{5\%} < OI \leq q_{25\%}$; c) $q_{25\%} < OI \leq q_{50\%}$; d) $q_{50\%} < OI \leq q_{75\%}$; e) $q_{75\%} < OI \leq q_{95\%}$; and f) $OI \geq q_{95\%}$.

The quantile trends of the distributions for most variables of the high-level sectors (HS) show a high dispersion for all the high-level sectors (HS), as shown in figure 3 for Operating Income.

The next step of the analysis was to select the sectors likely to have the highest expansion in the future. By a procedure detailed in the report (Atanasijević et al., 2021, pp. 106-112) the following 16 sectors were selected.[14]

Table 6 – *Selected sectors*

HS	Description	S	Description
02	Manufacturing, Mining, and Quarrying and Other Industry	09	Mining support service activities
		13	Manufacture of textiles
		16	Manufacture of wood and related products…
		22	Manufacture of rubber and plastic products
		27	Manufacture of electrical equipment
		28	Manufacture of machinery and equipment n.e.c.
		33	Repair and installation of machinery and equipment
04	Wholesale and Retail Trade, Transportation and Storage, Accommodation, and Food Service Activities	52	Warehousing and support activities for transportation
05	Information and Communication	59	Motion pictures, video, and television programme production
		62	Computer programming, consultancy, and related activities
08	Professional, Scientific, Technical, Administration and support services Activities	74	Other professional, scientific and technical activities
		78	Employment activities
		79	Travel agency, tour operator
		80	Security and investigation activities
09	Public Administration, Defence, Education, Human Health, and Social Works Activities	85	Education
		87	Residential care activities

Source: GRETA elaborations.

The selected sectors represented 8,080 firms (13.2% of the total in 2018) and 1,042,030 million dinars in terms of Operating Income (10.3% of the 2018 total). For these sectors, a first regression analysis was devised to analyse the variables that could best explain the development of the operating income for these best performing sectors (the development factors). The operating income (OI_{St}) was regressed on the productivity (wage per employee, WE_{St}), investment (increase in fixed assets $DIPE_{St}$), and the increase in financial liabilities (DL_{St}), according to the following linear specification:

$$OI_{iS,t} = \alpha_{S,t} + \beta_{S,t,1}\Delta IPE_{S,t} + \beta_{S,t,2}\Delta IPE_{S,t-1} + \beta_{S,t,3}WE_{S,t} + \beta_{S,t,4}WE_{S,t-1} + \beta_{iS,t,5}\Delta L_{S,t} + \beta_{iS,t,6}\Delta L_{S,t-1} + \varepsilon_{S,t}$$

[14] Essentially, the selection is based on the growth of *OI* of the 85 micro-sectors S, with a correction for the fact that, in each of these sectors, some enterprises are younger then 10 years and are therefore not present for all years.

The results are given in table 7.

Table 7 – *Regression results on the development factors by sector*

HS	S	Constant	$\Delta IPE_{S,2018}$	$\Delta IPE_{S,2017}$	$WE_{S,2018}$	$WE_{S,2017}$	$\Delta L_{S,2018}$	$\Delta L_{S,2017}$	Adj. R^2
Manufacturing, Mining, and Quarrying and Other Industry	**13**	9.00E–18 (0.000)	0.5189 (3.880)***	–	–	–	–	–	0.27
	16	–1.00E–17 (0.000)	0.9078 (19.029)***	–	–	–	–	–	0.82
	22	–6.00E–16 (0.000)	0.2005 (3.032)**	–0.3027 (–3.117)***	–	–	–	–0.508 (–4.402)***	0.73
	27	6.00E–17 (0.000)	–0.3803 (–2.020)*	–0.4265 (–2.362)**	–	0.1913 (2.893)**	–	0.2493 (2.239)**	0.47
	28	9.00E–18 (0.000)	0.322 (4.180)***	–	–	0.294 (2.586)**	–	–0.5097 (–2.169)*	0.50
	33	1.00E–17 (0.000)	–	–	0.3605 (3.504)**	–	–	–	0.13
Wholesale and Retail Trade, Transportation and Storage, Accommodation, and Food Service Activities	**52**	4.00E–17 (0.000)	0.4681 (11.543)***	–	–	–	–	0.5925 (16.750)***	0.96
Information and Communication	**59**	–7.00E–17 (0.000)	–	–	–	–	–	–	–
	62	–4.00E–17 (0.000)	0.2378 (2.673)**	–0.3116 (–3.446)***	0.3505 (3.752)***	–	0.3537 (3.181)***	0.0278 (1.985)**	0.42
Professional, Scientific, Technical, Administration and Support Services Activities	**74**	–6.00E–17 (0.000)	–	0.3732 (3.412)***	–	0.4238 (8.522)***	0.25 (9.917)***	–	0.45
	79	–7.00E–17 (0.000)	–	–	0.1603 (4.385)***	0.1229 (3.828)***	0.4499 (2.439)**	–	0.28
	80	3.00E–17 (0.000)	0.4335 (6.870)***	–	–	–	–	–	0.19
Public Administration, Defence, Education, Human Health, and Social Works Activities	**85**	3.00E–17 (0.000)	–	–0.6534 (–12.677)***	–	0.1615 (2.222)**	–	–	0.49

Note: In brackets the *t*-students of the related estimated coefficient, *** means that the parameter is not null at a significance level of 10%, ** of 5% and * of 1%.
Source: GRETA elaborations.

For instance, for the Manufacture of textiles (S13) and Manufacture of wood and related products (S16), the variable ΔIPE has a positive coefficient with a high Student t; therefore, Investments were useful for these sectors. This can be used to develop the following impact table.

Table 8 – *Impact of the proposed development factor on operating income*

HS	Development factors→ / Sectors↓	Investments	Skilled Human Resources	Debt
Manufacturing, Mining, and Quarrying and Other Industry	Manufacture of textiles	+		
	Manufacture of wood and related products…	+		
	Manufacture of rubber and plastic products	-		-
	Manufacture of electrical equipment	-	+	+
	Manufacture of machinery and equipment n.e.c.	+	+	-
	Repair and installation of machinery and equipment		+	
Wholesale and Retail Trade, Transportation and Storage, Accommodation, and Food Service Activities	Warehousing and support activities for transportation	+		+
Information and Communication	Motion pictures, video, and television programme production			
	Computer programming, consultancy, and related activities	-	+	+
Professional, Scientific, Technical, Administration and Support Services Activities	Other professional, scientific and technical activities	+	+	+
	Travel agency, tour operator		+	+
	Security and investigation activities	+		
Public Administration, Defence, Education, Human Health, and Social Works Activities	Education	-	+	

Source: GRETA elaborations.

Finally, an attempt was made to estimate the impact of possible support by estimating the elasticities of investment to the operating profit. The following equation was thus estimated, where ΔTA is the variation of total assets, and the other variables have been defined before:

$$\Delta IPE_{S,t} = \alpha_{St} + \beta_{S,t,1}\mathrm{OP}_{S,t} + \beta_{S,t,2}OI_{S,t-1} + \beta_{S,t,3}WE_{S,t} + \beta_{S,t,4}\Delta\mathrm{TA}_{S,t} + \varepsilon_{S,t}$$

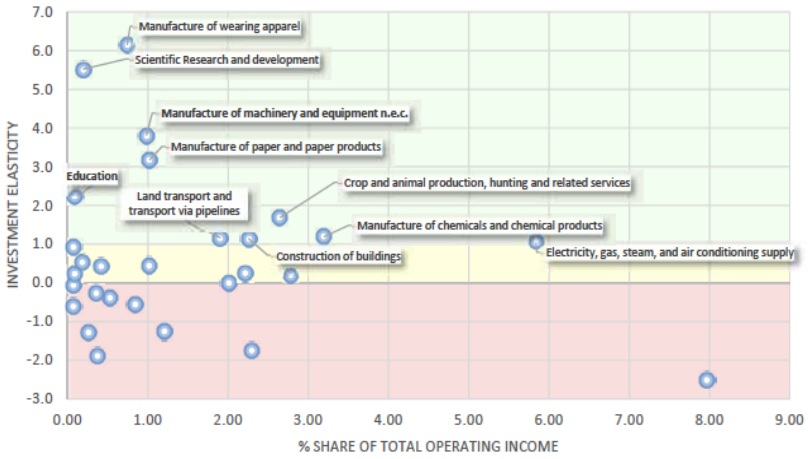
Based on these regressions, the elasticity of investment to profits was derived and the sectors were classified in those that are "elastic" to an increase in profits (in the green region in figure 4, below), those that were "inelastic" (in yellow), and those with a negative elasticity (light red).

In conclusion, the analysis of the development factors allows us to conclude that:

- The SMEs' Serbian market is driven by services. The market shares by sectors, based on Operating Income, are stable over time, confirming however the transformation away from agriculture and towards services.
- The primary sector and public administration have the lowest level of wages, whereas in services, and in particular those of higher specialisation, the employees are remunerated better. Gaps among sectoral wage levels highlight a problem of income inequality. The financial risk seems to be increasing in the primary sector, although remaining under control, and in the construction sector. The entire services sector sees financial risk on the rise. Looking at the empirical distribution of the Total Liabilities to Total Asset ratio, the maximum frequency of firms is concentrated around the 0.5 percentage value, which generally constitutes the discriminating value between firms that are financed through risk capital and those that are financed through debt capital.

– All services but Information and Communication Technology (ICT) seem to become more profitable in line with the economic transformation; however, Operating Profit can be falsely distorted by aggressive accounting practices and, therefore, must be carefully analysed.
– Sixteen fast-growing sectors were identified.
– Analysing the development factors for these sectors, they appear to respond to different kinds of policy interventions. The sectors belonging to Manufacturing seem to be positively influenced by investments and skilled human resources; therefore, policy support should concentrate on encouraging innovation and highly professional training. For the sector of Warehousing and support activities for transportation, debt management assumes importance in addition to investments. For the other best-performing sectors related to services, investments could have a positive impact, but the more relevant factors are debt management and skilled human resources.
– The conclusion that Investments and the capacity to fund funding depend on the assets or the guarantees linked to them, and not on the firm performance, is confirmed by analysing the sectorial Investment elasticities to variation in the Operating Profit and Total Assets.

Figure 4 – *Sectorial Investment elasticity with respect to percentage change in Operating Profit, 2018*



Note: the green background highlights the area where elastic sectors stand, the yellow one is the inelastic band, and the red one where sectors with negative elasticity fall.

3.4. Analysis of the EIB Apex loan

An attempt was also made to use the Serbian database to evaluate a standard financial product for SMEs called Multipurpose Bank Intermediated Lending (MBIL). This product is normally a credit line given to a local bank, generally private, that uses it to finance investment in SMEs. The principle is that the intermediating bank takes the risk of the final borrower and thus prices the final sub-loan. However, in accordance with EIB (European Investment Bank) practice, EIB local banks are contractually committed to transfer part of the financial advantage of the EIB financing to the final beneficiary. The variant of MBIL that was examined in Serbia is the so-called Apex Global Loan, which follows the same principles, except that EIB lends first to the national central bank, which then on-lends to local commercial banks that on-lend to final

beneficiaries, taking the risk. MBILs are an effective way to reach a large number of SMEs indirectly at a low cost, which is in fact zero in terms of grants. Sometimes the loans are criticized because it is not possible to determine ex ante the exact use of the funds, beyond their contractual use which is defined in broad terms (sectors, size, etc.) and because it is not always guaranteed that they benefit SMEs rather than the banking sector. This is, in fact, a problem that is common to most of the financial products for SMEs and it is mitigated by EIB with the obligation to transfer part of the financial advantage to the final borrowers. De facto, these loans are often the most effective way to address, in a scalable way, market failures linked to uncertainty and a lack of investment in SMEs.

In order to examine the effect of the EIB Apex Global Loan, the approach has been to investigate the financial accounts of the Serbian companies that received financing from this line of credit and compare their results to those of other companies.[15] Three main indicators have been considered:

- Operating profit in % of income (*OP*%)
- Operating income/Employees (Productivity *OI/E*)
- Total Liabilities/Total Assets (*Liab*%)

Table 9 – *Operating Profit on Operating Income ratio (OP%), 2018*

Class	Operating Profit%	Cluster 1	Cluster 2	Cluster 3	Total	Pearson	p-value
1	$\boldsymbol{OP}\ \% > \mathbf{30}\%$	21 *(0)*	1 *(0)*	883 *(1)*	905 *(1)*	1389.689	0.000
2	$\mathbf{20}\% < \boldsymbol{OP}\% \leq \mathbf{30}\%$	23 *(0)*	349 *(3)*	861 *(8)*	1233 *(0)*	529.204	0.000
3	$\mathbf{10}\% < \boldsymbol{OP}\% \leq \mathbf{20}\%$	79 *(0)*	1914 *(11)*	1473 *(2)*	3466 *(13)*	22.656	0.000
4	$\mathbf{5}\% < \boldsymbol{OP}\% \leq \mathbf{10}\%$	111 *(1)*	2461 *(14)*	1290 *(0)*	3862 *(15)*	62.922	0.000
5	$\mathbf{0} < \boldsymbol{OP}\% \leq \mathbf{5}\%$	212 *(0)*	4772 *(11)*	1645 *(1)*	6629 *(12)*	850.489	0.000
6	$-\mathbf{5}\% < \boldsymbol{OP}\% \leq \mathbf{0}\%$	44 *(0)*	1024 *(0)*	511 *(1)*	1579 *(1)*	31.632	0.000
7	$-\mathbf{10} < \boldsymbol{OP}\% \leq -\mathbf{5}\%$	5 *(0)*	377 *(0)*	193 *(0)*	575 *(0)*	16.471	0.000
8	$-\mathbf{20} < \boldsymbol{OP}\% \leq -\mathbf{10}\%$	4 *(0)*	309 *(2)*	231 *(1)*	544 *(3)*	9.525	0.009
9	$-\mathbf{30} < \boldsymbol{OP}\% \leq -\mathbf{20}\%$	2 *(0)*	69 *(0)*	141 *(0)*	212 *(0)*	68.564	0.000
10	$\boldsymbol{OP}\% \leq -\mathbf{30}\%$	2 *(0)*	0 *(0)*	293 *(0)*	295 *(0)*	459.325	0.000
	Total	503 *(1)*	11276 *(41)*	7521 *(14)*	19300 *(56)*		
	Percentage	2.6% *(1.8%)*	58.4% *(73.2%)*	39.0% *(25.0%)*	100% *(100%)*		

Note: number of firms per class and cluster, in parentheses are firms that received the Apex loan, and Pearson test.
Source: GRETA elaborations.

[15] This was possible because EIB and the National Bank of Serbia agreed to use the anonymized confidential data of the sub-loans of the Apex Global Loan for the purposes of the study. It was not possible to do the same with the products examined in the next section, but in principle the same approach could be envisaged if the data were available.

The full dataset was used in this analysis (for all years; extensive data cleaning, especially for the initial years of the sample, is explained in detail in the report). Based on the reduced dataset, which comprised 19,300 firms for which the data were reliable for all years, a cluster analysis was performed using Ward's minimum variance method (Hair at al., 2009). This statistical technique enables the definition of groups of observations in such a way that the distance inside each group is minimized while the distance between the groups is maximized. The 3 clusters obtained are presented in the table 9 for the year 2018 for 10 dimensional classes.

Table 10 looks at the median value of the three reference indicators.

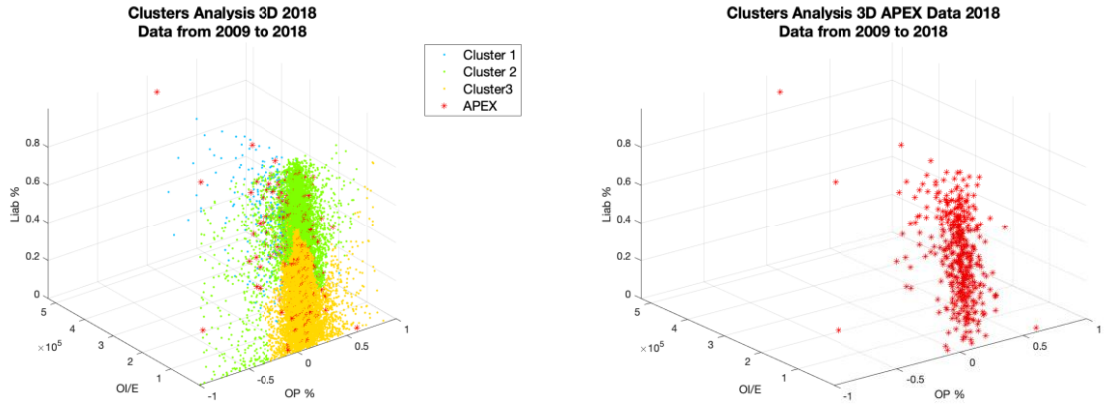
Table 10 – *Median values for the OP%, OI/E and LIAB% for classes and clusters, 2018*

Classes	Variable	Cluster 1	Cluster 2	Cluster 3	Total of clusters
1	$OP\%$	0.385	0.369	0.385	**0.382**
	OI/E	94.887	3.940	5.957	**6.161**
	$Liab\%$	0.261	0.599	0.152	**0.214**
2	$OP\%$	0.251	0.237	0.237	**0.237**
	OI/E	83.027	4.879	7.362	**6.887**
	$Liab\%$	0.401	0.514	0.150	**0.280**
3	$OP\%$	0.126	0.138	0.133	**0.134**
	OI/E	76.808	5.725	6.867	**7.286**
	$Liab\%$	0.531	0.646	0.236	**0.344**
4	$OP\%$	0.068	0.070	0.069	**0.069**
	OI/E	66.062	5.238	6.683	**7.614**
	$Liab\%$	0.591	0.723	0.313	**0.429**
5	$OP\%$	0.023	0.020	0.021	**0.021**
	OI/E	71.072	6.398	5.613	**6.748**
	$Liab\%$	0.684	0.772	0.367	**0.512**
6	$OP\%$	–0.010	–0.016	–0.015	**–0.015**
	OI/E	66.872	5.689	3.754	**4.396**
	$Liab\%$	0.738	0.785	0.347	**0.478**
7	$OP\%$	–0.078	–0.072	–0.070	**–0.071**
	OI/E	68.917	3.017	2.215	**2.562**
	$Liab\%$	0.873	0.728	0.230	**0.420**
8	$OP\%$	–0.164	–0.145	–0.137	**–0.141**
	OI/E	83.723	1.944	1.699	**1.791**
	$Liab\%$	0.813	0.711	0.184	**0.487**
9	$OP\%$	0.000	–0.238	–0.252	**–0.243**
	OI/E	0.000	1.534	1.399	**1.465**
	$Liab\%$	0.000	0.701	0.152	**0.477**
10	$OP\%$	0.000	–0.455	–0.313	**–0.450**
	OI/E	0.000	1.006	1.474	**1.013**
	$Liab\%$	0.000	0.504	0.280	**0.491**
Total of classes	$\boldsymbol{OP\%}$ **tot.**	**0.043**	**0.025**	**0.039**	**0.035**
	$\boldsymbol{OI/E}$ **tot.**	**71.392**	**4.689**	**5.402**	**5.868**
	$\boldsymbol{Liab\%}$ **tot.**	**0.621**	**0.727**	**0.301**	**0.445**

Source: GRETA elaborations.

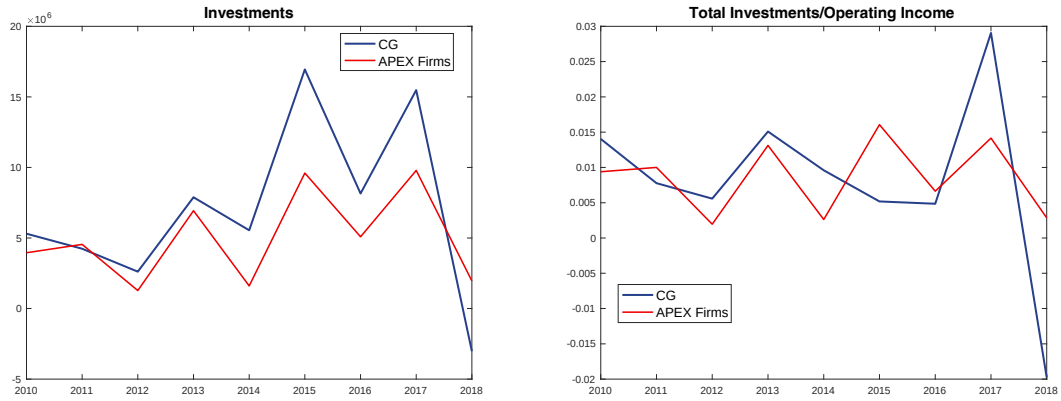
Table 10 suggests that, in the first cluster, firms are characterised by higher profitability and labour productivity and medium financial risk. This cluster is less numerous. In contrast, the second cluster groups firms with lower profitability, lower labour productivity and higher financial risk. Finally, in cluster three, firms have medium productivity and profitability and lower risk. As shown in the charts below, the firms that have received the Apex credit line concentrate in classes and clusters with a positive operating income ratio and a non–worrisome level of financial risk. This, on the one hand, seems to indicate that the selection has been made with accuracy and that Apex loans have led firms to maintain a good level of sustainability; on the other hand, it testifies to the effect of the intermediary banks' due diligence.

Figure 5 – *Results of the cluster analysis for the year 2018 (full sample and Apex only)*



A number of other descriptive and econometric analyses (difference in differences, Chow tests) were done with the Apex dataset and are documented in the report (Atanasijević et al., 2021, pp. 134-143). Not all of them are conclusive. It seems, however, interesting to report on the results of a comparison that was done between the firms that received the Apex credit line and a control group selected considering the distance metric of the cluster.

Figure 6 – *Total increase in fixed assets in Development, Plant and Equipment (left) and investment in % of Operating Income (right)*



In figure 6, the left chart shows that non-Apex firms in the control group invest more (in value) than Apex firms but the latter show greater stability in variance. The chart on the right shows that, over the entire period, the investments of Apex firms are not only more stable but also represent a greater percentage of operating income. Considering the results documented in the report, one can thus provide the following conclusions of this part of the analysis.

- The cluster analysis highlighted that firms financed with Apex loans remain in the same class and cluster over time and are characterised by a positive Operating Income ratio and a non–worrisome level of financial risk. This indicates that the loans allowed firms to maintain a good level of sustainability, and it testifies to the effect of the intermediary banks' due diligence.
- None of the performed statistical analyses (DiD and Chow test) highlighted a significant and positive impact of Apex loans on the firms' profitability, as already verified by Amamou et al. (2020) in a larger database and referring to 28 member countries of the European Union between 2008 and 2014.
- A graphical comparison shows that the financial risk (measured by the ratio of total Liabilities to Total Assets) is higher for firms receiving Apex loans. This may be because they are obliged to a more accurate accounting audit, and they express a credit demand and plausibly a higher propensity to invest.
- Regarding profitability, starting from 2014, firms financed with Apex loans present a higher and more stable Operating Profit to Operating Income ratio, a Profit before tax to Operating Income substantially in line with the control group, and a systematically higher return on equity.
- Even if, in absolute value, the firms selected as a control group by a matching procedure (not financed by Apex loans but similar to the financed ones) seem to have invested more than firms that benefited from the EIB credit line from 2012 to 2017, the latter showed a more stable propensity to invest over time and in the long term.
- By merging the Apex loans and the sectorial ranking procedures, it emerges that the 10% of firms indirectly financed by EIB fall also into the sectors selected by the ranking procedure as the best performing. In particular, the best performing Apex firms are concentrated in Manufacturing (electric equipment, rubber and plastic products, textiles, and repair and installation of machinery and equipment).

4. WB EDIF financial products: an outlook

The empirical analysis developed in the two previous sections documented the high dispersion in the financial results of the productive sector of the Western Balkans, with particular reference to the case of Serbia.

As argued in the first section, in such a high–risk and uncertain environment, a mechanical calculation based on a comparison of the cost of the financial instruments used to support private sector investment (in terms of grant equivalent used) and the impact achieved (leverage) would not be very meaningful. Nonetheless, a judgment on the effectiveness of the instruments deployed should still be based on their assessed costs and benefits, and notably on their impact on private sector profits and investment.

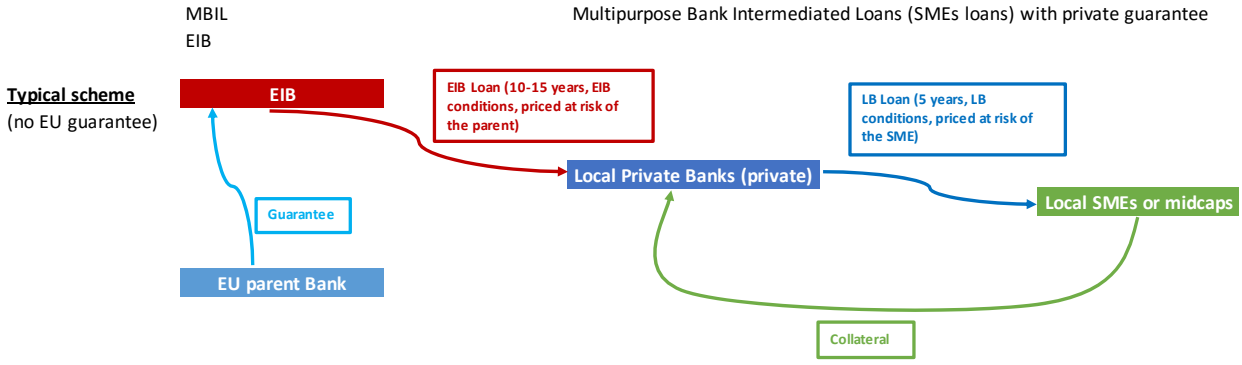
In the following section, the main financial products offered by the WB EDIF and its partners are briefly presented and discussed in line with the arguments developed in the conceptual section 1 above and with the empirical analyses developed in sections 2 and 3 above.

4.1. Intermediated credit lines (EIB)[16]

As seen in the previous section, Multipurpose Bank Intermediated Loans are the standard product that EIB offers to finance small-scale investment and SMEs. The funds provided can be used to finance small-scale projects and SMEs in all eligible sectors (most sectors, excluding arms, climate sensitive sectors, 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). An EIB loan typically finances 50% of investment costs only; thus, the minimum leverage of these loans on investment is 2.

The local bank fully assumes the risk of its final sub-borrower and prices the loan accordingly. However, the banks 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 7 – *Multipurpose Bank Intermediated Loans*

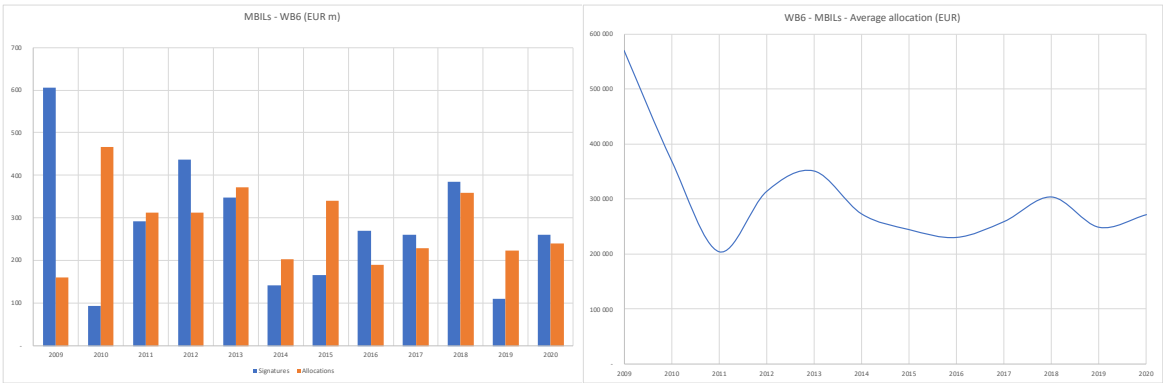


As shown in figure 8, EIB provides between EUR 100m and EUR 300m per year of loans to SMEs, mid-caps and small infrastructure in the six countries of the Western Balkans. The average allocation (see the second chart in figure 8 below) gives an idea of the relatively small size of the EIB sub–loans.

Impacts: in the standard MBIL structure, the grant element is virtually absent. The "good price" offered to the intermediary bank by 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 and ultimately, therefore, 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.

[16] Here the EIB's MBIL is discussed as an example of an intermediated credit line targeting SMEs through the local banking sector. Other MDBs [not defined] have similar products.

Figure 8 – *EIB MBILs*

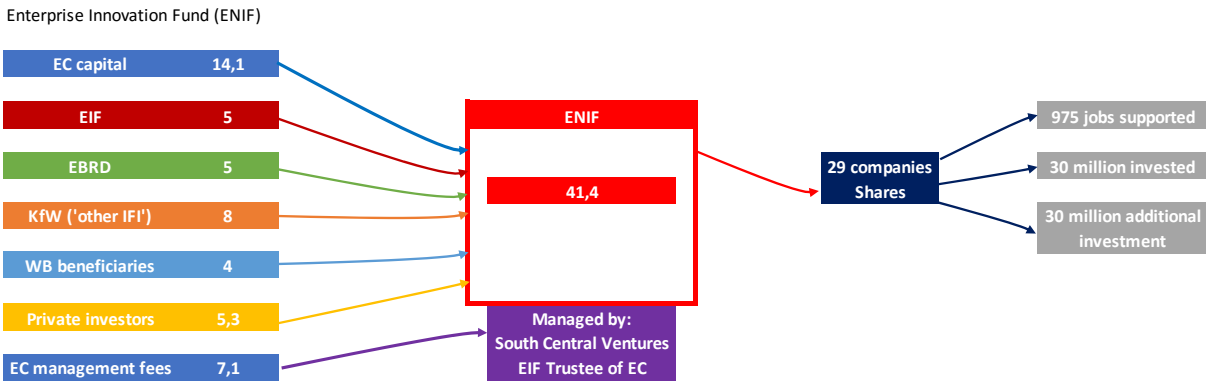


A variant of this scheme is when the EIB credit line is guaranteed by the budget of the European Union (for instance in Apex structures, or for operations with local banks that do not have an EU parent). In these cases, which correspond to about 25% of EIB MBIL activity in the region, the grant element can be estimated at 7% of the value of the EIB loan (3.5% of the value of the leveraged investment).

4.2. Enterprise Innovation Fund (ENIF)

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

Figure 9 – *Enterprise Innovation Fund (ENIF)*



Impacts: thus far (as of the closing date of the report), the fund has supported 29 innovating 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 come, in one way or another, from the public sector. When the investors exit, some ten years after they first invest, 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.

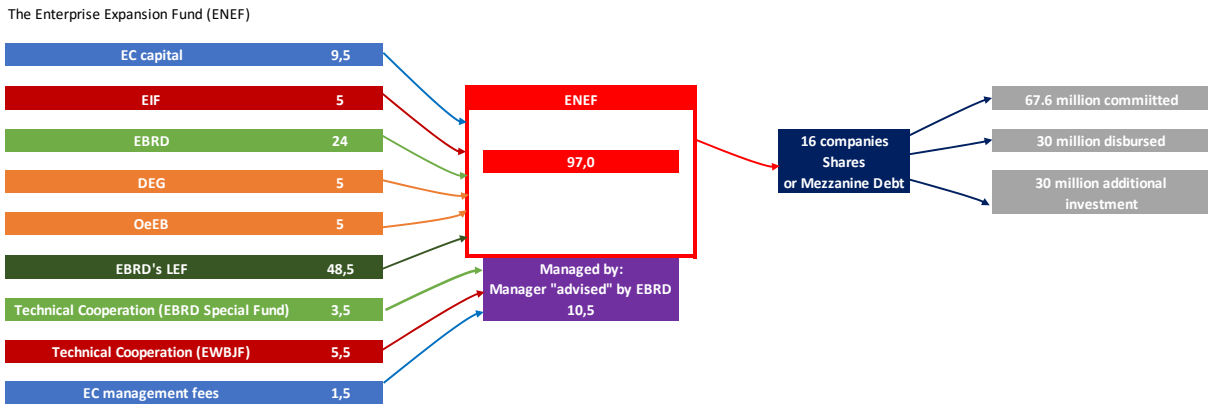
4.3. The Enterprise Expansion Fund (ENEF)

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 was matched one to one with funds from the EBRD's LEF instrument.

Impacts: ENEF supported 16 companies, to which it has so far (as above, at the closing date of the report) disbursed EUR 30m; this was matched with an equal amount by EBRD's LEF. Investors have already been returned EUR 7.5m. All beneficiaries are SMEs and they received support from the EBRD's Small Business Advisory Support programme (SBS). Leverage is a minimum of 2 and can be estimated to reach up to 4.

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

Figure 10 – *Enterprise Expansion Fund*

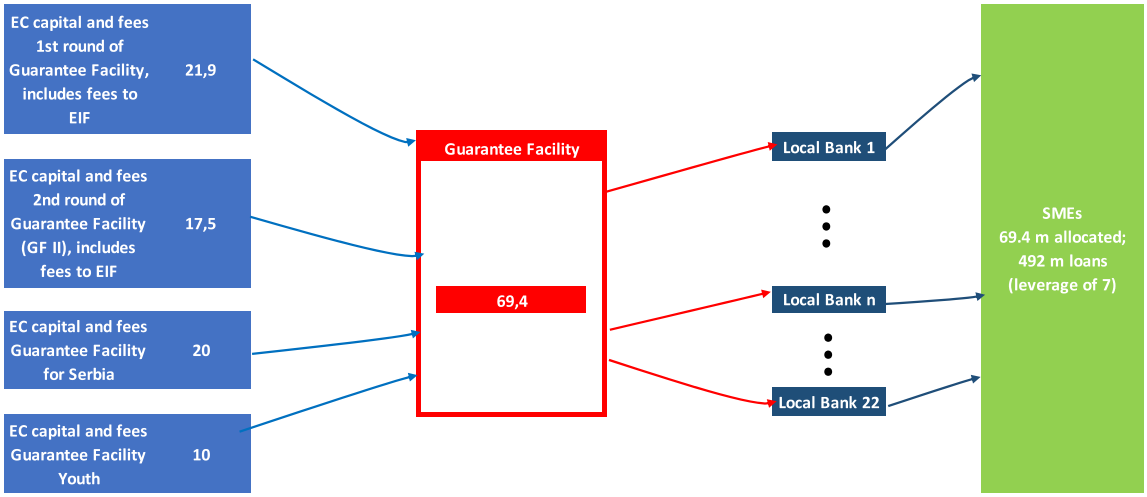


4.4. Guarantee Facility (GF)

The WB EDIF Guarantee Facility provides a capped guarantee for SME loans via the participating commercial banks in the WB territories; the 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 69.4m from the EU budget. The funding was used for 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 10m 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 11 – *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 the order of 7 on loans, through which it also supports wages and employment.

4.5. Regional SME Competitiveness Support Program (EBRD's CSP)

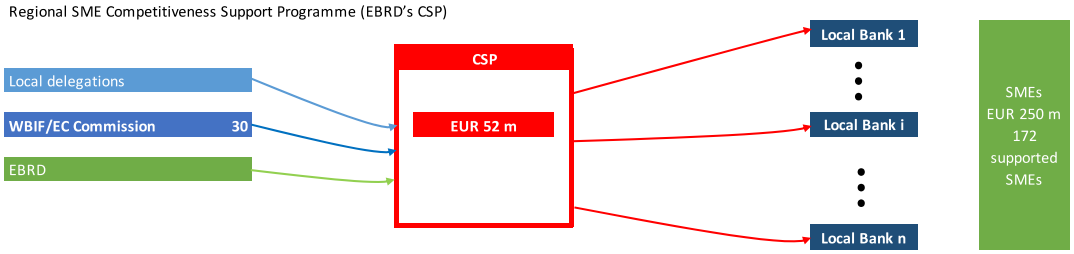
The objective of EBRD's Regional SME Competitiveness Support Program is to improve SMEs' access to finance in order to introduce EU standards; this is done by providing financing and investment incentives as a grant element of the loans and by increasing SMEs' awareness and knowledge of the benefits 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 SME technical assistance, provided by a project consultant to market, implement, and monitor the programme.
3) A consultant to verify the technical implementation of the investments by sub-borrowers before the incentives are paid.

Figure 12 – *Regional SME Competitiveness Support Program*



Impact: overall the program has attracted EUR 52m in funding, which will generate loans for EUR 250m in support of 172 SMEs. The EU incentive represents 15% (EUR 30 m). Credit lines of EUR 178m have been provided, of which EUR 78m is supported by the Western Balkans Investment Framework (see WBIF and Cingolani, 2021) with circa EUR 11.7m in grants. All of the beneficiaries are SMEs. Consultants check their adherence to the EU agenda.

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

4.6. Conclusions on the financial needs for the next period

As argued, it is not possible to rank the instruments discussed above in terms of their cost–benefit ratio in an uncertain environment such as that prevailing in the Western Balkans. Financial instruments based on equity that are more selective in terms of targeted companies, such as ENIF and ENEF, have a higher cost in terms of grants consumed and achieve a lower leverage on investment, but at the same time they support the emergence of those companies that are introducing new technologies. They thus provide invaluable complementary support to reduce the macroeconomic market failure due to insufficient overall investment.

Given the overview of the findings from the relevant literature, the analysis of the financial sector in the region, and the development of the SME market segment, it seems that the existing range of financing instruments for SMEs offered by the EU through the WB EDIF facility in the period 2014-2020 responds to very important needs and is fit for the purpose. These instruments should continue to cover a range of financing needs: funding equity through venture capital and private equity funds; guarantee schemes for risk sharing and coverage of reasonable risk for financial intermediaries to finance loans to SMEs (in this way contributing to lower interest rates, lower collateral needs, and longer maturities for investment loans); credit lines; grants; and technical assistance (stand-alone or in combination with grants and other financing instruments). For these reasons, the study recommended keeping the full range of instruments in the next 2021-2027 cycle and argued that they should all be designed to include a component aimed at improving local knowledge through technical assistance and networks, both horizontal and vertical. Leverage is an important element and instruments

should be designed to the extent possible in such a way that the package offered achieves an overall average target leverage of around 5 in terms of total investment mobilized.

To achieve such a leverage, and based on expert knowledge, the study estimated that the total package of the EU grant funding for SMEs for the Western Balkans during the next cycle should amount to 1 billion euros for the 2021-2027 period. This financial package for the support of SMEs is intended to be complementary to the existing financing of SMEs (own funding, financial sector, government programs).

Table 11 – *Tentative distribution of funds dedicated to SME support in the WB in the next cycle (2021-27), EUR m*

Financing Instruments	**Estimated investment amount/framework**	**Technical Assistance to SMEs**	**Coordination and TA for government agencies; local centres of competence; academia**	**Total**
Guarantees for investment loans and investment loans	500	100	20	**620**
Equity (PE and VC)	200	50	10	**260**
Programmes for SMEs intermediated by local government agencies: mostly grants or grants in combination with equity (matching equity of private investors), guarantees or loans	100	50	50	**200**
Total	**800**	**200**	**50**	**1080**

5. General conclusions

The study presented in this article offers several original insights on the implementation of policies promoting the development of the private sector in high-risk regions outside the EU, and it is of particular interest for the Western Balkans. It shows in particular why, in a high-risk context, it is important to look at the conditions in which economic surpluses and profits are realized, as any support provided to the private sector ultimately impacts, directly or indirectly, its profits and hence its capacity to invest.

Given the history of the Western Balkans, it is not surprising to find that these economies are characterized by uncompetitive market structures, where information is ambiguous and uncertainty high. Although reforms have been started and are producing some effects, the situation is still very far from the textbook cases of perfect competition and it requires adequate policy responses.

The conceptual instruments to address issues of market failures in financial markets are still relatively underdeveloped and do not permit 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 available empirical evidence and practical experience gained from the use of financial instruments for the private sector in the Western Balkans markets, but it must necessarily retain 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 grant element and its inverse (the leverage) remain valid criteria of reference for the choice of financial instruments for the private sector in development environments, as investment is likely to be depressed in high–risk environments.
d) 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; 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 and dimensional impacts.
e) In terms of welfare micro-analysis, the "with" and "without" intervention scenarios should be compared starting from a position far away from equilibrium. In such cases, the criterion of total consumption generated by a project is still valid in principle (Lesourne, 1975) but it should be applied "out of equilibrium"; this implies that it cannot neglect distributive aspects and therefore that accounting prices may diverge substantially from market prices, particularly for what concerns the price of financial products.
f) The question of distribution should be looked at in aggregate terms. Although further analysis is needed to clarify the conceptual causality chains, it is suggested that the impact of each financial instrument in terms of distribution between labour and capital be examined, the argument being that the market failure is potentially of a macroeconomic nature and it is linked to distribution.

Based on a review of the financial instruments deployed through international cooperation organized under the WB EDIF in the six Western Balkans countries from 2012 to 2020, it appears that each instrument has contributed to a positive impact on the economic conditions in the region and has 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.

The detailed quantitative analysis carried out on the economic evolution of the region and the balance sheets of the Serbian private sector shows how careful research makes it possible to draw relevant policy conclusions in an uncertain environment despite the important gaps and the poor quality of the existing information. In principle, these analyses could be extended to other countries in the Western Balkans region, where similar datasets exist, and to other areas of interest for EU external policy.

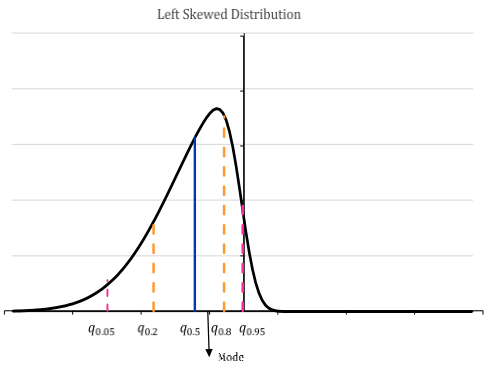
Appendix

Table A1 – *Items from balance sheet and income statements, in alphabetical order*

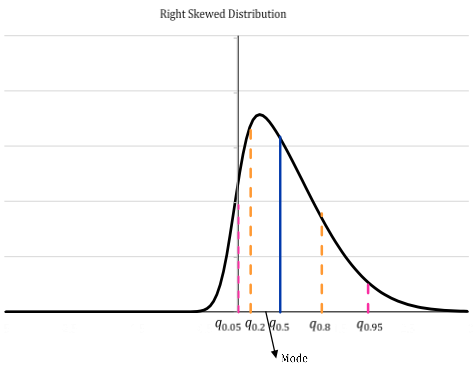
1.	Capital	13.	Income from Goods sold	25.	Operating Profit
2.	Cash and Cash equivalent	14.	Intangible Assets	26.	Permanent Assets
3.	Concessions, patents	15.	Inventories	27.	Permanent Assets
4.	Costs of Goods sold	16.	Investments in Development	28.	Plant and Equipment
5.	Current Assets	17.	Long term Financial Investments	29.	Profit before tax
6.	Equity	18.	Long term Liabilities	30.	Profit from Financing
7.	Export	19.	Long term Provisions	31.	Salaries, Wages, Indemnities
8.	Financial Expenses	20.	Long term Provisions and Liabilities	32.	Short term Financial Investments
9.	Financial Income	21.	Materials	33.	Short term Liabilities
10.	Finished Products	22.	Net Profit	34.	Total Assets
11.	Goods	23.	Operating Expenses	35.	Total Equity and Liabilities
12.	Immovable	24.	Operating Income	36.	Value-added

The two polar cases of left and right skewed distributions are illustrated in figure A1.

Figure A1 – *Left and right skewed distributions*



Asymmetry on the left, the Mode > Median and Mean. Higher frequencies for values above mean and median.



Asymmetry on the right: Mode < Median and Mean. Higher frequencies for values below mean and median.

Table A2 – *Nace high level sectors (HS), main sectors (MS) and sectors (S)*

HS	***HS description***	*MS*	*S*	***Sector***
1	Agriculture, Forestry and Fishing	A	01	Crop and animal production, hunting and related services
			…	…
2	Manufacturing, mining, and quarrying and other industry	B	05	Mining of coal and lignite
			…	…
		C	10	Manufacture of food products
			…	…
		D	35	Electricity, gas, steam and air conditioning supply
		E	36	Water collection, treatment and supply
			…	…
3	Construction	F	41	Construction of buildings
			…	…
4	Wholesale and retail trade, transportation and storage, accommodation, and food service activities	G	45	Wholesale and retail trade and repair of motor veh. and motorcycles
			…	…
		H	49	Land transport and transport via pipelines
			…	…
		I	55	Accommodation
			…	…
5	Information and Communication	J	58	Publishing activities
			…	…
7	Real Estate activities	L	68	Real Estate activities
8	Professional, Scientific, Technical, Administration and support services Activities	M	69	Legal and accounting activities
			…	…
		N	77	Rental and leasing activities
			…	…
9	Public Administration, Defence, Education, Human Health, and social works activities	O	84	Public Administration and Defence
		P	85	Education
		Q	86	Human health activities
			…	…
10	Other Services	R	90	Creative, arts and entertainment activities
			…	…
		S	94	Activities of membership organisation
			…	…
		TU	97	Activities of household as employers of domestic personnel
			98	Undifferentiated goods and services producing activities

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