

Financing SMEs: Some empirical evidence in the Western Balkans and Turkey^{1,2}

Massimo Cingolani
European Investment Bank

Ana Rosa Gonzalez-Martinez
Cambridge Econometrics

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0. Introduction

SMEs are a major player in the productive system of most European economies, with their contribution to employment ranging from 53% in Poland to 85% in Greece (Eurostat, 2016). Similarly, their share of value added represents comparable percentages. Despite their unquestionable role as one of the main drivers of employment creation across European countries, it is well known that SMEs face important constraints to access credit (OECD, 2016). In this context, this contribution seeks to improve our understanding of the relationship between SMEs and the banking system. In doing so, we developed a conceptual framework that is rooted in the monetary theory of production as developed by Graziani (2003).

Graziani (2003) describes the monetary circuit as a sequential process that can be split in several steps, here we retained five. First, banks grant credit to firms, this is the so called 'initial finance', which permit them to initiate the production process. Before starting production firms hire their workers. As a result, firms demand the volume of credit that they need to pay the expected wage bill, which, in macroeconomic terms, corresponds to effective demand. Once the wages are paid, final or intermediate goods are produced. There is equivalence between the wage bill and the cost of the goods, which are produced. In this step, banks and firms negotiate the volume of credit and its cost, i.e. the interest rate. In the second step, wage earners decide to utilize their income for several purposes: consumption, bank deposits or acquisition of securities. Thirdly, consumer goods are purchased by wage earners. Investment goods are exchanged

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² The views and opinions expressed in this article are those of the authors and do not necessarily reflect the views of the institutions to which they are affiliated.

among firms. The acquisition of consumer goods and securities permits money to flow back to the companies, which use it to repay their initial debts. Money is destroyed when debts are paid, i.e. the circuit is closed.

Money creation takes place when the banking sector grants new loans to the companies, but there is a destruction of money when the loan is repaid. Firms can also use the resources that they obtain from the sales of their production and the issue of their securities to start the new production process instead of repaying their debts, which is equivalent to a renewal of their credit. However, if wage earners do not spend all their income because they keep cash balances, firms are not able to repay completely their debt and there is a fraction of the money initially created that is not destroyed. In that case, the financing of a new production cycle means an increase in the total money balances.

The next section introduces some key structural data on SMEs in the Western Balkans and Turkey. Then the conceptual framework is discussed with reference to the data available. Subsequently, we proceed to test econometrically our theoretical proposition by using available data on SMEs in the case of the Western Balkans and Turkey.

I. Some key economic facts on SMEs in the Western Balkans and Turkey

In the Western Balkans³, the data on the SME sector is scarce. Recently the OECD's policy index updated the standard information available for the year 2013 or for the most recent available year. It shows that in the WB6 SMEs employ 1.8 million persons or 72% of total employment and generate EUR 16 bn of value added (58% of the total). In Turkey the relevant figures are respectively: 8.8 m employed (75% of the total) and EUR 86 bn (54% of the total).

The data of OECD and those provided by Eurostat are not exactly coincident. Indeed, the Eurostat database on SMEs does not provide figures for the WB6 and Turkey, although the Commission is part of the SME policy index exercise, and actually finances it. Nonetheless in the next page the data from EUROSTAT and from OECD have been plotted on a common scatter. The chart shows that, other things equal, the incidence of SMEs in total employment is inversely related to the level of development measured by GDP per capita expressed in purchasing power standards. This implies that one would expect that on average WB6 and Turkey rank amongst the countries in which the importance of SMEs in total employment is higher. Indeed for the 36 countries for which data is available and is reproduced in the Chart and the embedded table (despite not being strictly comparable), WB6 and Turkey rank in the 50% of the countries with the higher share of SME employment, the only exception being Bosnia and Herzegovina⁴. This aspect will be exploited in the rest of the paper.

³ In the following the Western Balkans "6" are defined as comprising Albania, Bosnia and Herzegovina, Kosovo under resolution 144, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia, and they are referred to as WB6.

⁴ The BFC study discussed below gives a higher figure for the incidence of SMEs in Bosnia Herzegovina. The BFC table based on national data and surveys, is reported in the Annex for comparison.

Table 1: SMEs in the Western Balkands and Turkey

	ALB		BIH		KOS		MKD		MNE		SRB		WB6 (*)		TUR	
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share
Number of enterprises																
Micro	73916	95.1%	22801	94.8%	19718	90.9%	48394	90.9%	20364	92.9%	269931	96.0%	455 124	94.8%	2362995	97.0%
Small	3 026	3.9%			1 643	7.6%	4 041	7.6%	1 278	5.8%	8 903	3.2%	18 891	3.9%	48 229	2.0%
Medium	678	0.9%	1 059	4.4%	278	1.3%	702	1.3%	238	1.1%	2 011	0.7%	4 966	1.0%	20 692	0.9%
Large	99	0.1%	185	0.8%	48	0.2%	123	0.2%	37	0.2%	489	0.2%	981	0.2%	3 858	0.2%
SMEs	77 620	99.9%	23860	99.2%	21 639	99.8%	53137	99.8%	21 880	99.8%	280 845	99.8%	478 981	99.8%	2 431 916	99.8%
Total	77719		24 045		21 687		53 260		21 917		281 334		479 962		2 435 774	
Employment																
Micro	139120	43.4%	155255	39.7%	47148	33.5%	113536	33.3%	n.a.	n.a.	589 686	42.4%	1 044 745	40.4%	5 312 800	45.2%
Small	58 067	18.1%			30 442	21.6%	75 758	22.2%	n.a.	n.a.	179 178	12.9%	343 445	13.3%	1 491 995	12.7%
Medium	62362	19.5%	103 657	26.5%	27 886	19.8%	72 234	21.2%	n.a.	n.a.	210 609	15.2%	476 748	18.4%	2 072 448	17.6%
Large	60823	19.0%	132 241	33.8%	35 332	25.1%	79 838	23.4%	n.a.	n.a.	411 030	29.6%	719 264	27.8%	2 879 712	24.5%
SMEs	259549	81.0%	258 912	66.2%	105456	74.9%	261528	76.6%	n.a.	n.a.	979 473	70.4%	1 864 918	72.2%	8 877 243	75.5%
Total	320373		391 153		140 788		341 365		n.a.	n.a.	1 390 503		2 584 182		11 756 955	
Value added (in EUR m)																
Micro	705	25.2%	2 157	36.8%	n.a.	n.a.	803	23.8%	480	35.9%	2 998	20.1%	7 143	25.2%	32 785	20.5%
Small	624	22.4%			n.a.	n.a.	776	23.0%			2 203	14.8%	3 603	12.7%	20 480	12.8%
Medium	562	20.1%	1 362	23.3%	n.a.	n.a.	666	19.7%	384	28.7%	2 713	18.2%	5 687	20.1%	32 925	20.6%
Large	901	32.3%	2 340	39.9%	n.a.	n.a.	1 127	33.4%	475	35.5%	7 019	47.0%	11 862	41.9%	73 743	46.1%
SMEs	1891	67.7%	3 519	60.1%	n.a.	n.a.	2 245	66.6%	864	64.6%	7 914	53.0%	16 433	58.1%	86 190	53.9%
Total	2792		5 859		n.a.		3 372		1 339		14 933		28 295		159 933	

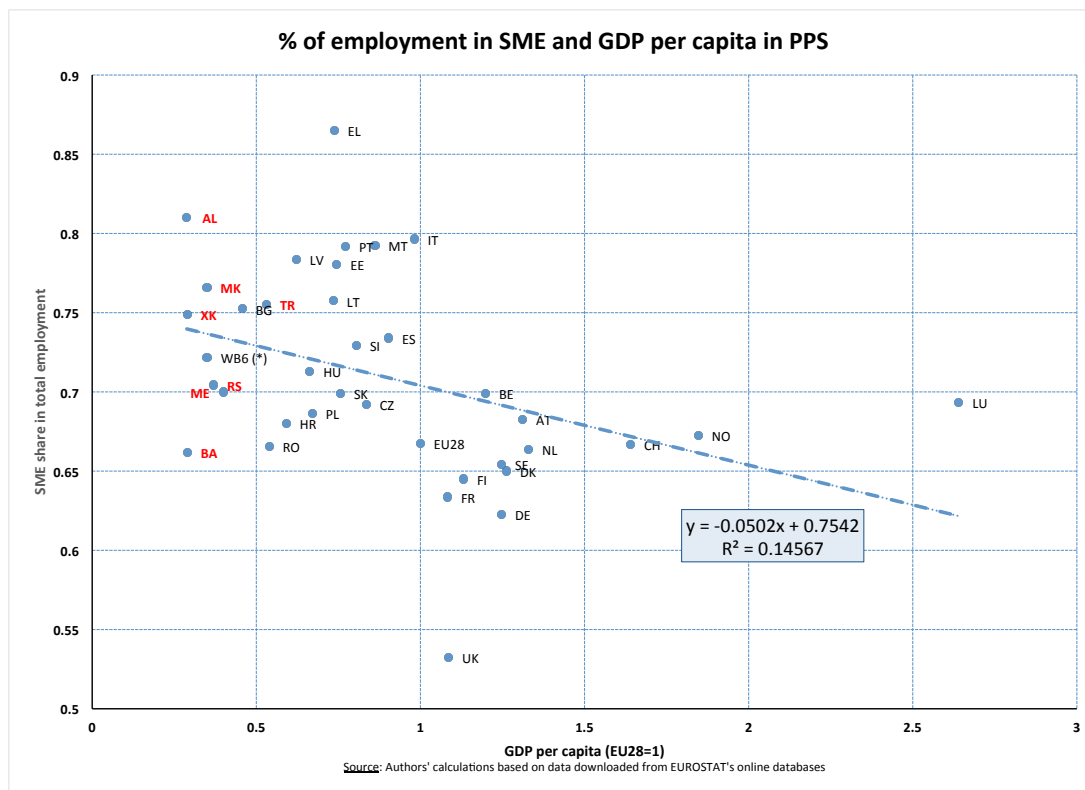
Note: Data for 2013 or latest available year. Reproduced from OECD et al. (2016), p.53

Sources: European Commission (DG GROW) and German Institute for Economic Research (DIW ECON); National statistical offices; SBA government questionnaire.

(*) Totals for WB6 do not include Montenegro for employment and Kosovo for value added

In a context where most time series referring to SMEs are missing, it can be argued that, given the importance of SME employment in the region, a variable such as total macroeconomic employment is mainly influenced in its movements (especially increases) by those companies with a size of less than 250 employees.

Chart 1: SME incidence in total employment in the Western Balkans and in the EU



A recent study conducted by the consultant BFC under the EIB assignment for the coordination of the Advisory and Support Pillar of the *Western Balkans Enterprise Development and Innovation Facility*⁵, shows that the main sector of activity of SMEs in

⁵ See: http://www.eif.org/what_we_do/guarantees/index.htm.

the region is trade, which represents around 35-40% of the number of SMEs and some 25-30% of their total employment. Not all enterprises take loans.

The study tries to estimate some figures for the size of the SME loan market. On the demand side, it starts from a figure of the average loan and then, based on the percentage of SMEs taking a loan, it estimates a loan demand figure. This is put at EUR 11.7bn for the WB6 region.

Table 2: SME data for the Western Balkans

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Country	N. of SMEs N.	Loan Demand		Loan Demand EUR m	Bank Loans EUR m	Loan Supply		Main SME sector	
		Average loan EUR	% of SMEs taking loan %			% of SMEs	Loan Supply EUR m	%N	%E
AL	111 059	35 668	36.00%	1 426	4 247	26.30%	1 117	Trade	40% 34%
BA	186 341	34 409	51.50%	3 302	8 774	22.40%	1 965	Trade	31%
XK	45 985	30 507	52.20%	732	2 019	40.30%	814	Trade	51%
MK	70 453	45 052	40.10%	1 273	4 122	34.80%	1 434	Trade	35% 31%
ME	22 313	47 519	52.80%	560	2 030	25.80%	524	Trade	39%
RS	280 845	25 753	61.80%	4 470	15 772	45.10%	6 864	Other SMEs	35% 21%
WB6 (*)	716 996	36 485	32.24%	11 763	36 964	32.45%	12 718		

On the supply side the study starts from the volume of loans and, given the percentage of loans estimated to go to SMEs, calculates a loan supply indicator, which takes the value of EUR 12.8 bn for the region.

To compare these figures with some main macroeconomic structural data for the region, one can refer to Table 3, which shows that by and large the macroeconomic volume of loans corresponds to less than half of estimated GDP.

Table 3: Main macroeconomic data for the Western Balkans

Table 3: Main Macroeconomic Data						
Country	GDP 2015	GFCF 2014	Empl. 2013	Pop. 2014	15-65 2013	15-24 2013
AL	10 533	2 583	1 165	2 896	2 519	585
BA	14 663	2 258	1 047	3 827	3 226	558
XK	5 816	1 262	338	1 805	1 192	#N/A
MK	8 477	2 117	688	2 066	1 755	305
ME	3 569	643	202	622	505	87
RS	32 830	6 155	3 249	7 149	7 965	1 265
WB6 (*)	75 887	15 018	6 689	18 365	17 162	1 657

Of relevance also for SMEs and employment, the fact that compared to a total population of 18.3 million people, and a population in the age of working (15-65) of 17.5 million people, those having an employment are only 6.7 million. Also, young people, for which unemployment rates of 50% are reported, can be estimated at 2.4 million people, including some 5% of total population assumed to be comprised between 25 and 30 years old in addition to the population 15-24 reported in the table. This put at 1.2 million the estimated number of de facto unemployed young people in the region, showing the urgency to act to remedy this situation.

II. The conceptual framework⁶

The theoretical perspective in which this paper is written is one where non-neutral money produces short and long-term real effects. In a sequential economy developing in calendar time, money makes equilibria path-dependent, the economy has a high probability of getting stuck in equilibria with unemployment and/or under-utilisation of capacity and these problems need to be addressed by an active economic policy as it would be unrealistic to think that, in such an economy, *laissez faire* could work.⁷

A natural theoretical reference for examining lending to SMEs in this perspective is Graziani's (2003) monetary theory of production, where endogenous money, interpreted as a flow (and not as a stock), generates path dependent temporary monetary equilibria and where finance impacts on the real economy in the period of the circuit and after. A closely related approach is Davidson's (1989 and 2003) "American" post-Keynesian synthesis and his critique of both the "mainstream" neo-Austrian and neo-classical / neo-Keynesian equilibria based on the joint rejection of the neutrality of money and of Patinkin's (1956/1965) neo-Keynesian integration of non-neutral money in the form of money balances (stock) *à la* Pigou. Indeed, both Davidson and Graziani paid significant attention to Keynes' *initial finance* problem, an aspect studied by Keynes after writing the General Theory, that puts the latter in a perspective of continuity with the Treaty and that is usually neglected in neo-Keynesian and other mainstream analyses.

Both Graziani's and Davidson's approaches can be extended to uncertainty and risk. For instance, for Davidson, risk quantifications are impossible in non-ergodic environments (Davidson, 1982-1983), which explains why mainstream rational expectations equilibria must be rejected. Rational expectations are an essential building block of the neo-classical and the neo-Keynesian approaches. Despite appearances, they are also the main reference for the so-called neo-Austrian approach, at least in the version of Hayek, who assumes *a priori* that, without the distortions brought by money and banks, the economy would converge to a "neutral money" natural (and optimal) equilibrium, which implies logically *laissez faire* policy prescriptions.

Contrary to Davidson, Graziani's approach to the monetary circuit admits the possible quantification of risk, albeit in a context where mainstream equilibria are rejected because of path dependence, which implies *de facto* the impossibility of learning out of equilibrium, which would in turn be necessary to justify the above mentioned *a priori* for the stability of the general equilibrium that is retained by Hayek⁸.

⁶ The authors are grateful to Riccardo Bellofiore, Francesco Garibaldo, Mario Seccareccia and Jan Toporowski for references and discussions on the topics examined in this section.

⁷ The ordo-liberal school retains another variant of this stability assumption, which is that, once the rules (the "Economic Constitution") are established and enforced by the State, "neutral money equilibria" will prevail, thus suggesting a passive State policy of "making markets work" contrary to the active policy prescriptions which are needed under path dependence. One of the authors is in debt with Brigitte Young for clarifications on the relations between the policy prescriptions of the ordo-liberal school and of the neo-Austrians, taken broadly and mainly as disciples of Hayek.

⁸ One can refer to Guesnerie (2001 and 2005) or Evans & Honkapohja (2001). Path dependence is an interpretation of dynamics on which the two great Italian Post-Keynesian economists Augusto Graziani and Paolo Sylos-Labini *de facto* agreed, despite their differences of opinions on the status of the monetary circuit and on the interpretation of Marx. The interested reader can refer to Cingolani (2015 and 2016).

The monetary circuit is closely linked to the work of Michal Kalecki for what concerns the explanation of profits and their distribution (Graziani, 2003, p. 24; Kalecki 1937 and 1942). Kalecki, who also worked in a logic of path dependence, developed the concept of increasing risk, which states that other things equal, bigger investment projects are not necessarily the riskiest. Josef Steindl, a student of Kalecki, applied Kalecki's concept of increasing risk to the analysis of the size distribution of firms. Based on the application of this principle, SMEs can be expected to have a lower return on capital and/or a higher cost of credit (Steindl, 1941, 1945). This can explain why the Pareto distribution, or similarly highly skewed and unequal distributions, provide a good fit of the of the firms' returns, as they have been proven to do also for income and wealth (Steindl 1965, 1972). Steindl's analysis also implies that there is an inherent tendency towards the concentration of industry (Bloch, 2005).

Further to the pioneering studies of Steindl, the relevance of the Pareto distribution (and the related Gibrat-Zipf law) has been supported by several empirical results, see for example Crosato & Ganugi (2007) for Italian industrial enterprises, Fujiwara et al. (2004a and b) for European firms⁹ and Ishikawa (2005) for Japan. In fact, in a way, the high concentration and unequal distribution of returns and wealth observed empirically can be interpreted in terms of the breaking-up of the assumption of non-arbitrage, which is necessary to obtain the money neutrality mentioned above and points in the direction of a kind of "unequal exchange of risk" (cf. Emmanuel 1972 [1969]), an hypothesis that deserves to be explored further¹⁰.

Apart from a possible rejection of the assumptions of the mainstream financial and risk theories, such as the no-arbitrage assumption, the approach retained here of sequential time with path dependence also gives much importance to the spatial factor and its interrelations with the productive structure. For instance, in exploring the causes of the European crisis, Bellofiore & Garibaldo (2014) linked the monetary analysis of the circuit to the literature on industrial restructuring at the European level following the fall of the Berlin wall. These authors criticise the simplistic accounts of the economic crisis in Europe in terms only of macroeconomic current account imbalances and point to the need of considering the structural effects of the restructuring of German industrial structure and the parallel reorientation of German external trade flows away from Southern Europe and towards Asia and Eastern Europe after German reunification. In this work, they refer to contributions such as Simonazzi, Ginzburg & Nocella (2013), who further quote Deutsche Bundesbank (2011a and 2011b) or Carlin & Soskice(2009). From the macroeconomic viewpoint, this industrial economics analysis is complemented by a consideration of the traditional and often forgotten Keynesian investment-saving causality that makes capital exports a possible driving factor of the current account balances (rather than the other way round), a point further

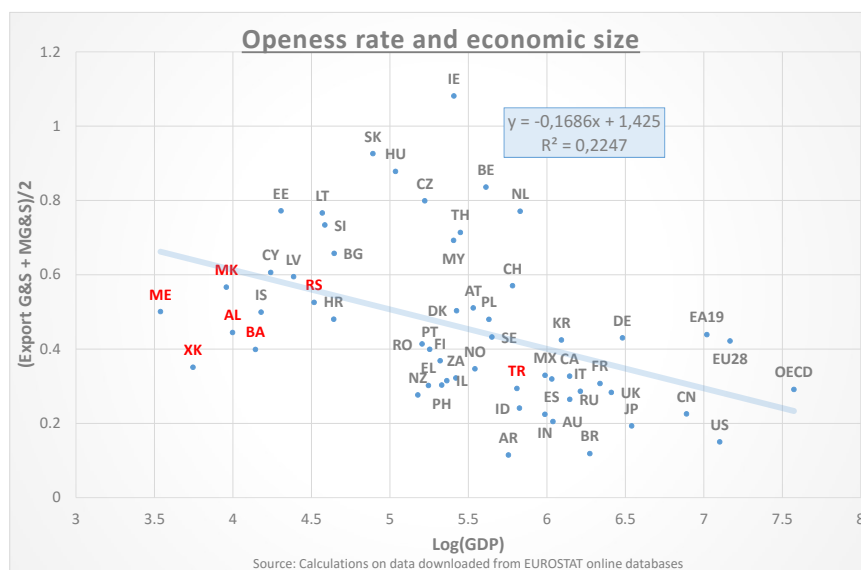
⁹ Bottazzi (2009) observed that, contrary to what is stated in this reference, Gibrat's and Pareto law are not the same thing. Indeed Gibrat's law foresees the independence of the growth rate of a firm from its size, whereas Steindl obtained Pareto distributions starting from Kalecki's assumption of increasing risk, which implies that SMEs would have lower returns and a higher cost of credit other things equal.

¹⁰ Incidentally, if in the perfect world of money neutrality and non-arbitrage, one observes a Pareto distribution of income, returns, and/or wealth, as one *de facto* does, and the market allocates the risks efficiently, it means that risks are Pareto distributed, i.e. concentrated on the richest people, a statement that runs contrary to intuition.

developed for instance in Borio & Disyatat (2011). In such a perspective, the competitiveness of SMEs in a given area results from their capacity to integrate the international division of labour at a suitable technological level, which requires in turn to be part of the transnational production networks managed by the dominant enterprises located in the central areas. The distribution of the value created by these integrated transnational productive chains will depend on the decisions of the dominant firm in the chain, and will be a key factor for the regional competitiveness of SMEs in a certain area.

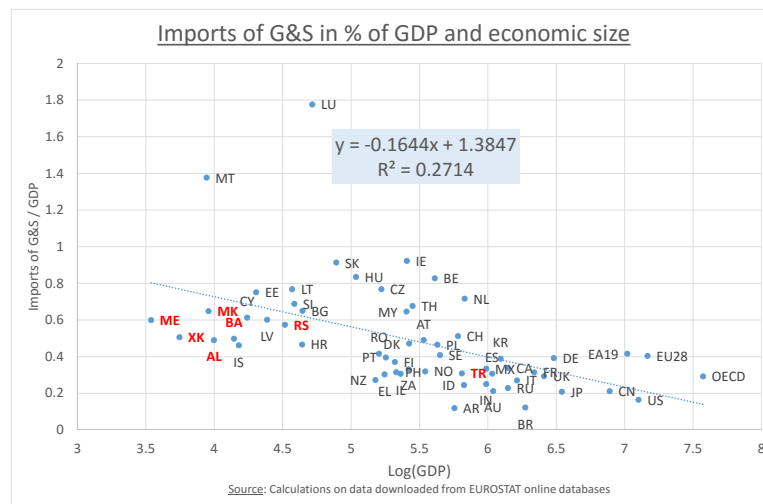
While these factors play certainly an important role, for the Western Balkans they are difficult to track statistically at the microeconomic level of the SMEs. However some evidence can be provided at macroeconomic level and can be analysed econometrically. For instance, the charts 2 and 3 below, give an indication on the relative positioning of the Western Balkans in the international division of labour as measured by the openness ratio (exports of goods and services + imports of goods and services)/(2*GDP) or the imports ratio (imports of goods and services/GDP).

Chart 2: Openness rate and economic size



The WB6 are positioned on the left part of these charts, given their low average income level, and this is linked to a relatively high incidence of SMEs in their productive structure, a high openness rate, linked also to their limited economic size, and a stronger dependence on imports. The last two aspects, taken together, also reflect the structural deficit of their current account of the balance of payments, often of the order of 10% of GDP, that confirms that the region is “dependent” on the external markets. Together with Chart 1, Charts 2 and 3 thus give a picture of the Western Balkans as a region integrating the international productive networks with an economic structure mainly made of SMEs, primarily turned towards the satisfaction of domestic markets, at a relatively low technological level.

Chart 3: Import rate and economic size



Given the unavailability of more micro data, the minimal theoretical framework that is offered below for the empirical analyses of the following sections is essentially a macroeconomic one, where the SMEs are not separated from the rest of the productive sector. While this choice is dictated at this stage mainly by the lack of data availability, it can be defended on two grounds:

- a) the macroeconomic approach allows already to introduce in a more relevant way the monetary factor and particularly money creation by the banking sector, which is itself a pre-condition for a proper analyses of risk.
- b) To a large extent, the productive structure of the Western Balkans is essentially made of SMEs, therefore the macroeconomic evolutions of the private productive sector reflect to a large extent developments concerning the population of SMEs.

In the following, the empirical analysis thus relies heavily on the techniques of econometric estimation with unobserved variables making use of macroeconomic data and instrumental variables.

Two ways appear possible for the empirical validation of the conceptual scheme described above. The first consists in using macroeconomic data on lending and output creation in line with the phasing scheme of the monetary circuit. The second concerns the econometric explanation of the macroeconomic aggregates of employment, whose variations can be taken to reflect mainly credit conditions affecting SMEs. If, in this explanation, some key post-Keynesian variables appear to be significant, then one has found some *prima facie* evidence of the relevance of the proposed approach for the analysis of SMEs.

Concerning the first aspect, the reference to the analyses of integrated T accounts developed below allows to show the potential of the theoretical approach of the monetary circuit for analysing credit issues and their impact on the real economy, and thus also SMEs that represent an important part of it. In particular, an exercise is developed below to illustrate the sequence of adjustments following a loan from an international institution to the local banking sector for investment by SMEs. In this example, only the effects on the receiving economy (Western Balkans) are considered and they are taken as flows during the relevant periods (phases of the circuit). For simplicity, these flows are actually recorded in T accounts representing balance sheets, with therefore Assets on the left hand side and Liabilities on the right hand side.

Figure 1: Loan to SME phase 0

EU consolidated bank sector		WB commercial banks		WB central bank		WB Balance of Payments		WB Enterprises (SMEs)		WB Households	
Loan FLO	Deposits FX0	Reserves R0	Debt FDO	FX holdings FX0	Reserves R0	Debt FDO	Cap. Imp. FX0				

At the start of the sequence of the circuit, a loan FLO is given by the foreign consolidated banking sector to the local banking sector. This increases holdings of foreign exchange reserves at the local central bank by FX0. The local Central Bank creates the equivalent amount of local currency and puts it at the disposal of the local banking sector in the form of reserves R0, which correspond to the debt liability of this sector towards the EU consolidated banking sector. In the local balance of payments, increased foreign debt is compensated by an entry of capital in the form of cash.

Figure 2: Loan to SME phase 1

EU consolidated bank sector		WB commercial banks		WB Enterprises (SMEs)		WB central bank		WB Balance of Payments		WB Households	
		Reserves -R0	Deposit C1	Deposit C1	Debt D1						
		Loan L1									

In the first phase of the circuit the local banking sector gives a loan to the local productive sector, which is assumed to be made only of SMEs. In so doing, they destroy their reserves and replace them with a claim on SMEs that corresponds to the deposit they offer to them as a third part liability the latter use for payments. For the SMEs these, in an amount C1, are an asset that is liquid and accepted as local currency. In their liabilities, SMEs have the corresponding debt to the local banking sector D1.

Figure 3: Loan to SME phase 2

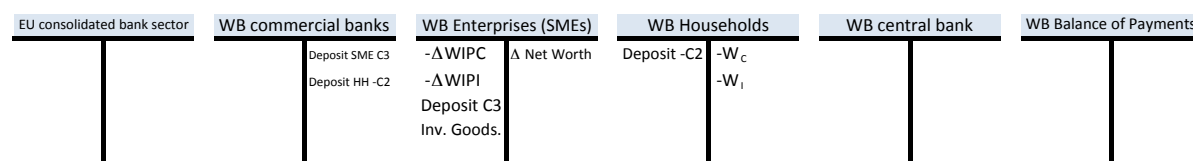
EU consolidated bank sector		WB commercial banks		WB Enterprises (SMEs)		WB Households		WB central bank		WB Balance of Payments	
		Deposit SME -C1	Deposit HH C2	Deposit -C1	ΔWIP_C	Deposit C2	W_C				
				ΔWIP_I			W_I				

In the second phase, SMEs pay salaries to households cancelling their deposits and they acquire a claim on the household on the production to be completed, which is booked here as an increase in work in progress. Both these claims and the corresponding salaries paid are due in part for the production of consumption goods and in part for the production of capital (or export) goods. On the side of consolidated sector of local commercial banks, deposits of SMEs are transferred to households.

In the third phase, households buy consumption goods from the enterprises for the total of their wages as they are assumed not to save for simplicity. SMEs thus recover from sales the money they injected initially in the circuit as salaries for an amount of $C3=C2$.

Because households do not save, their previous deposits are fully spent for consumption ($C_3=W_1+W_C$) and thus disappear.

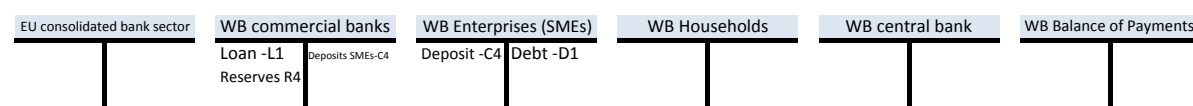
Figure 4: Loan to SME phase 3



SMEs, after recovering their monetary costs, generate a profit in the form of an increased net worth corresponding to the investment goods they accumulate that are not yet sold. In the liabilities of the banking sector, deposits of households are transferred back to the account of SMEs.

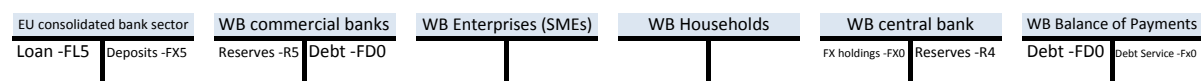
In the fourth phase of the circuit, SMEs repay the loan to the local banks. They thus cancel their debt and transfer their liquid holdings to the banks. The latter thus increase their reserves at the central bank and cancel both the loan in their book and the corresponding money liability to SMEs.

Figure 5: Loan to SME phase 4



Finally, in the fifth phase, the local commercial banks repay the loan to the consolidated banking sector abroad by using their reserves, against which the central bank gives them back foreign currency. It is of course assumed for simplicity that, during the period, the foreign currency was kept by the central bank as a foreign reserve and that the exchange rate remained stable. The money initially created with the corresponding loan in the starting phase is now completely destroyed and the monetary circuit is closed.

Figure 6: Loan to SME phase 5



It is to be noted that if households would have kept some of the money they received as payment of their salaries in the form of monetary balances at local banks, and these would not have been relent to the SMEs, not all the money initially created would have been destroyed at the closure of the circuit and SMEs would have remained indebted towards the local banking sector at the end of the circuit for the full amount of households' savings.

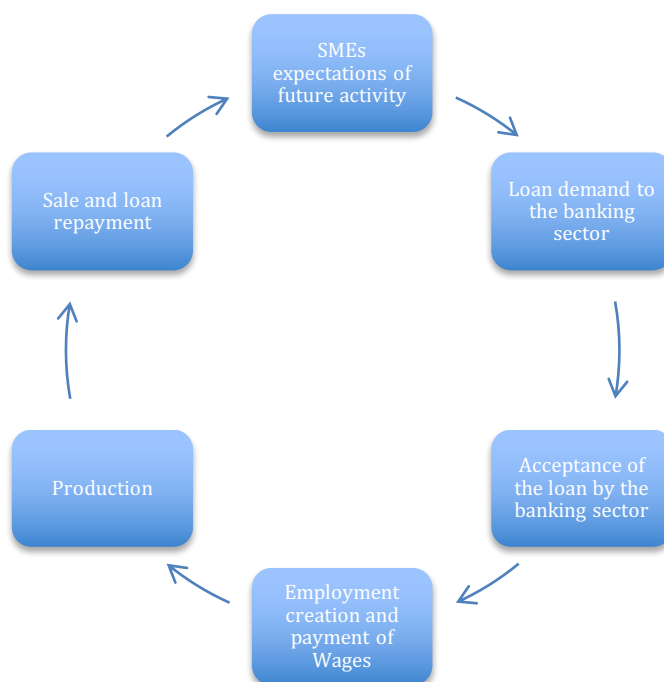
The number of phases illustrated above is arbitrary, as are as well the time boundaries defining the accounting period of the circuit. The established convention is that the starting phase of the circuit coincides with the initial money creation, while the ending phase is marked by money destruction. The initial contributions to the theoretical literature of the monetary circuit assumed implicitly or explicitly the identity between the period of monetary creation and destruction on the one hand, and the accounting, production and consumption periods on the other. Working in a financial accounting perspective, Vallageas (forthcoming) is probably the first author who discussed explicitly the possibility to break the identity between the four periods.

Often, the accounting period coincides with the production period, as in the example above. In this example however, only consumer goods are disposed of during the accounting period, while investment/exports goods are accumulated at the end of the period. It is noteworthy that these accumulated goods are a profit that is realized by SMEs in kind. This illustrates the fact that in this variant of the monetary circuit, profits are analysed first as a real transfer. In the next phases of the circuit, these profits in kind are going to be realized in money by selling the corresponding goods to households, to the Government or abroad.

The alternative variant is to allow the monetary realisation of profits within the period of the circuit. This would require extending the accounting period up to the sale of investment/export goods, thus obtaining the full coincidence between the accounting period, the period of creation and destruction of money and the consumption period. In such a case, the presence of monetary profits within the period can be achieved with a higher initial loan of the local banking sector that covers also the monetary payment of the investment goods within the period. This case, which can be taken as an illustration of the "single period" in the monetary circuit, was understandably retained as a reference case in the first treatments of the monetary circuit (see for instance Parguez, 1980 or Schmitt, 1966) as it is readily comparable to the static general equilibrium of Hayek and Arrow-Debreu, to the stationary neoclassical equilibrium of Walras, Pigou and others or to the single period of the Swedish school.

Finally, a comment must be made on interest rates, which are assumed in the example to be either null or to be offset between active and passive interests. This implies that the banking sector makes no profits. This assumption was retained only for ease of presentation and can be easily relaxed in the same way in which one can introduce monetary profits in the circuit. In Cingolani (2010) examples are developed in which both interests and monetary profits appear during the accounting period of the circuit.

Diagram 1: The stationary monetary circuit



Starting from this rather detailed description of the sequence of the circuit, what are the

implications for the data generation process and the possible econometric estimations? If the economy is relatively stable in some kind of stationary state in levels or in growth rates, the sequence depicted in Diagram 1 on the previous page corresponds to the “circular economy” equivalent of the above example.

It follows that under either stationary or uniform growth conditions, the following correlations would be expected both at macroeconomic level or at the level of SMEs aggregates, when the corresponding data exists:

- *Loans at time_t = f(Wages at time_t); or*
- *Loans at time_t = f(Value of Production at time_t); or*
- *Loans at time_t = f(Value of Sales at time_t).*

Another possibility is to take macroeconomic employment as an endogenous variable. This is consistent with Keynes' concept of effective demand, which is one of the theoretical roots of the monetary circuit. For instance let's assume SMEs expectations are embedded in a desired level of employment E_{SME}^* , which is a function of SMEs' perception of effective demand and of the financial costs that banks impose on them FC_{BANK} , captured by Sylos' variable SYLOS as in relation (1)¹¹. Let's assume then that the financial costs are set by banks as a function of the volume of the loans they want to generate LOAN*, themselves a function of the perceived effective demand by banks, $EFFD_{BANKS}$, as in relation (2):

$$E_{SME}^* = f(EFFD_{SME}, FC_{BANK}) \quad (1)$$

$$FC_{BANK} = g[LOAN^*(EFFD_{BANK}), SYLOS] \quad (2)$$

Then replacing (2) in (1) one gets (3):

$$E_{SME}^* = f\{EFFD_{SME}, g[LOAN^*(EFFD_{BANK}), SYLOS]\} \quad (3)$$

Assuming a simple standard rationing scheme for effective demand we can write:

$$E_{SME} = f[\text{Min}(EFFD_{SME}, EFFD_{BANK}), SYLOS] = f(EFFD, SYLOS) \quad (4)$$

Ideally one would estimate directly (4), however, since EFFD and SYLOS could be unobservable, one can assume:

$$EFFD = g_1[LOAN, GDP]; SYLOS = g_2[LOAN, GDP] \quad (5)$$

where both loan and GDP are nominal. In that case, the relation to be estimated would be:

$$E_{SME} = f(LOAN, GDP) \quad (6)$$

and to avoid multicollinearity problems:

$$E_{SME} = f(LOAN/GDP) \quad (7)$$

where if LOAN/GDP is significant the model is validated.

¹¹ This is a variable that captures the cash flow stress of debtors, see the annex to Sylos (2003).

III. Empirical findings

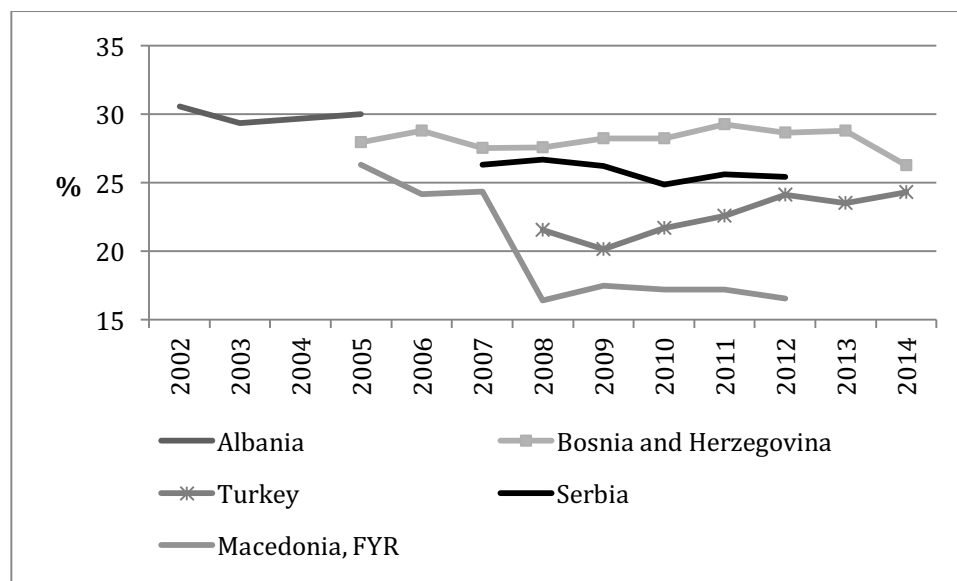
In order to draw some empirical evidence, we focus on the following economies: Turkey, FYROM, Albania, Serbia and Bosnia and Herzegovina. Unfortunately, countries such as Kosovo and Montenegro could not be included in this exercise due to data availability reasons.

An overview of the data sources, along with a brief description of the variables that have been used is provided in the Appendix.

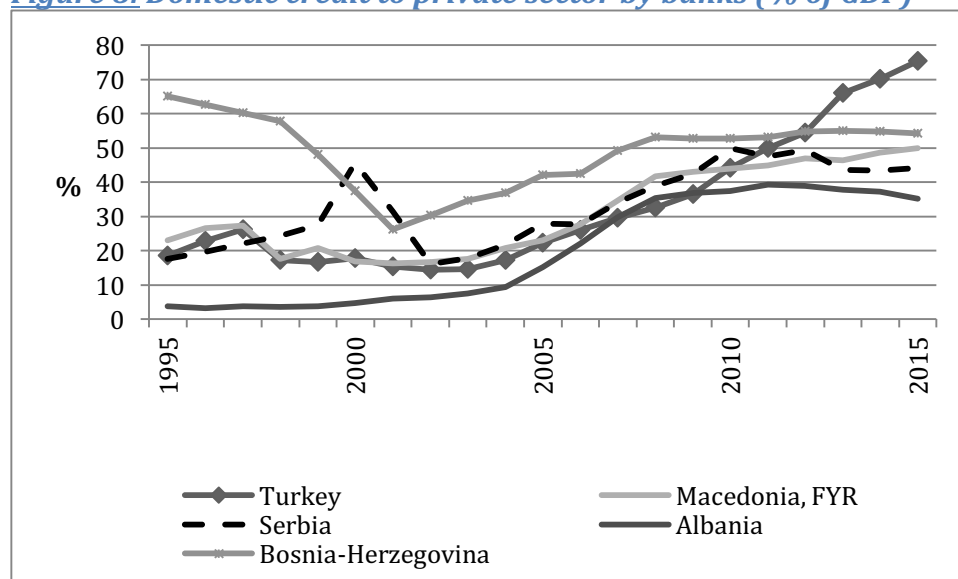
3.1 Stylised facts

To begin with, we focus on the evolution of compensation to employees over the last decade. As shown in Figure 7, compensation of employees as a share of total expenses has been stable in the case of Bosnia and Herzegovina. The strongest fluctuations in this variable have been observed in the case of Macedonia.

Figure 7: Compensation of employees (% expenses)



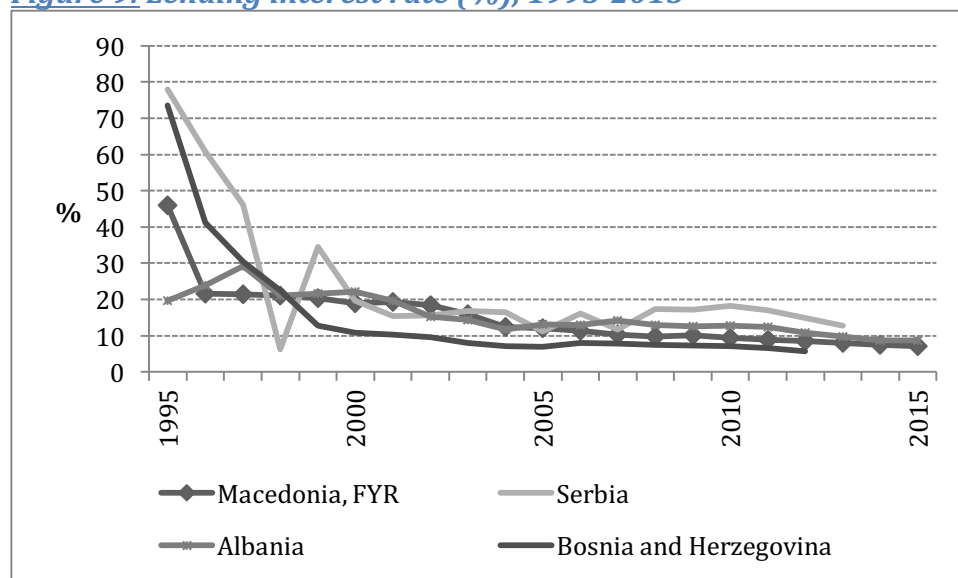
For a better understanding of the degree of development of the financial system, Figure 8 displays the evolution of the domestic credit to the private sector that has been issued by banks. Overall, an increase in domestic credit by banks has been observed since the early 2000s. Particularly relevant is the fact that for most of the economies under consideration the share of domestic credit to GDP remained stable during the aftermath of the financial crisis. An exception to this general trend is the Turkish economy, where an upward and strong trend has been followed since 1997.

Figure 8: Domestic credit to private sector by banks (% of GDP)

Source: Authors' elaboration based on the World Bank database.

Note: In the case of Serbia and Bosnia and Herzegovina the data for the period 1995-1996 has been estimated by means of linear extrapolation.

Drawing attention to the cost of finance, Figure 9 reports the lending interest rate that private sector borrowers need to face when accessing bank financing. As shown in the figure, a substantial decrease in the interest rates has been observed since 1995. Nevertheless, lending interest rates seem to have stabilised over the last five years and are in the range of 5-15%.

Figure 9: Lending interest rate (%), 1995-2015

Source: Authors' elaboration based on the World Bank database.

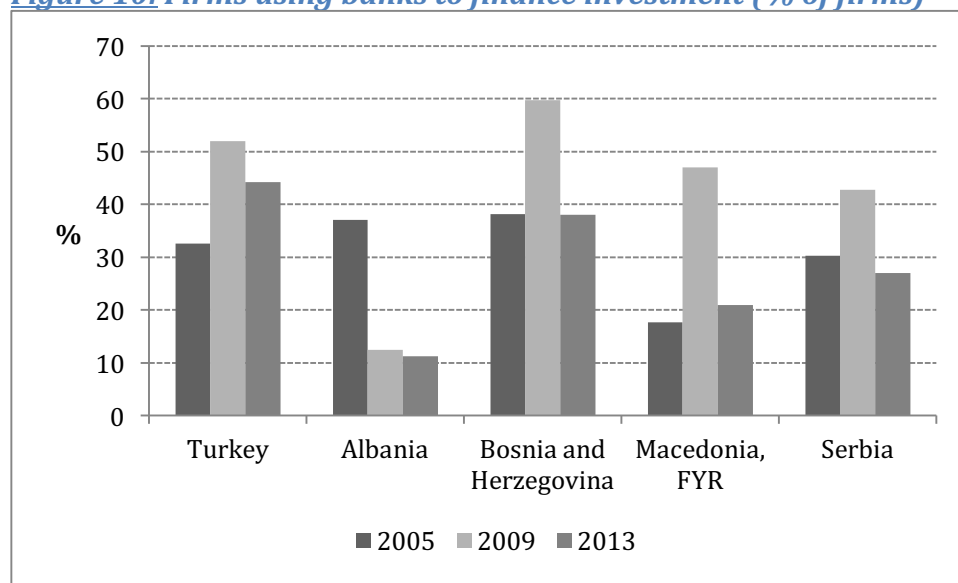
Note: No data is reported for Turkey in this database. In the case of Serbia, the data for 2015 has been estimated by means of linear extrapolation.

Moreover, Figures 10 and 11 show the proportion of firms that have used banks to finance investment and working capital respectively. Turning to the use of banks to finance investment, the lowest proportion has been observed in Albania, where only 10% of firms use this channel. In contrast, around 40% of the firms that operate in

Turkey and Bosnia and Herzegovina obtain the financial resources that are required to finance their investments from banks.

Focusing on the use of banks to finance working capital, Figure 11 shows a considerably expansion of this source of finance over the period 2005-2013 in the case of Macedonia. In particular, the proportion of firms that has used this source of finance has increase by 20% during the mentioned period. However, the opposite trend has been observed in the Albanian economy, where a slight decline was registered.

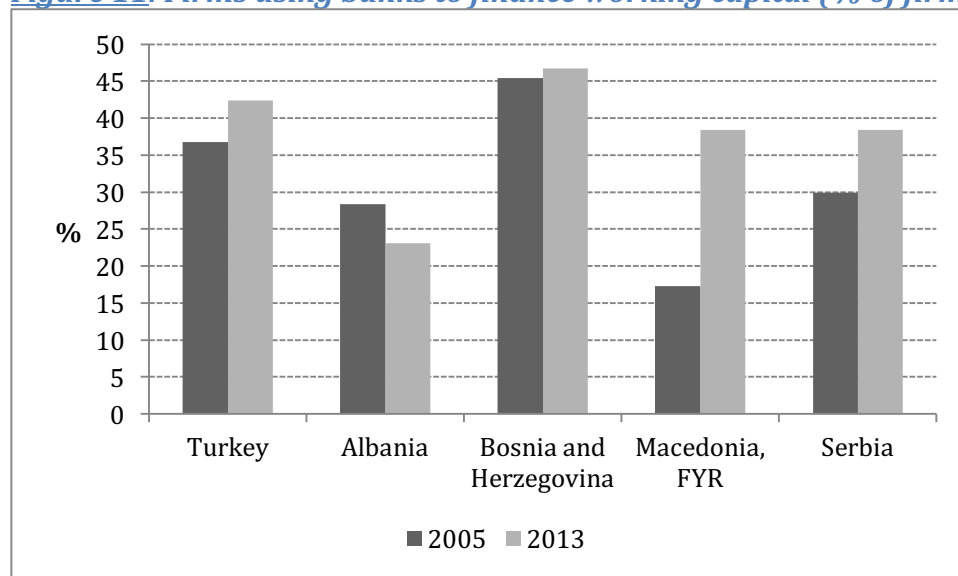
Figure 10: Firms using banks to finance investment (% of firms)



Source: Authors' elaboration based on the World Bank database.

Note: The data showed as 2009 in the case of Albania relates to 2007, since the 2009 value is missing from the World Bank database. A similar treatment has been used in the case of Turkey where the data was available for 2008.

Figure 11: Firms using banks to finance working capital (% of firms)



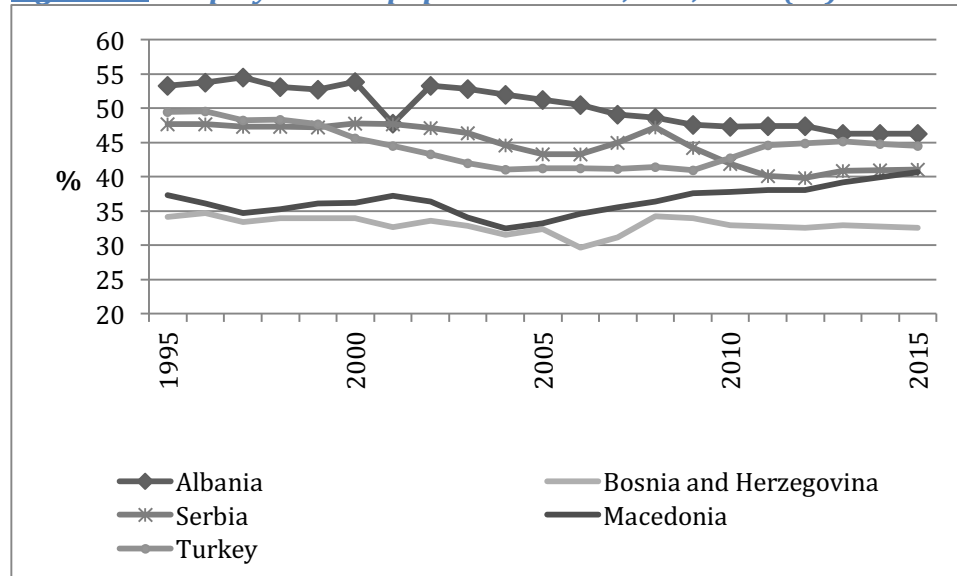
Source: Authors' elaboration based on the World Bank database.

Note: Data for 2009 has not been reported since it is missing in the original source.

A comparison of Figures 10 and 11 reveals that a larger percentage of firms use banks to finance working capital rather than investment. The only exception to this general trend is Turkey in which the same proportion of enterprises finance investment and working capital by means of banking finance.

As shown in Figure 12, employment measured as a percentage of total population has remained stable over the period 1995-2015 in the case of Bosnia and Herzegovina, while an increase in employment has been observed since 2005 in Macedonia.

Figure 12: Employment to population ratio, 15+, total (%)

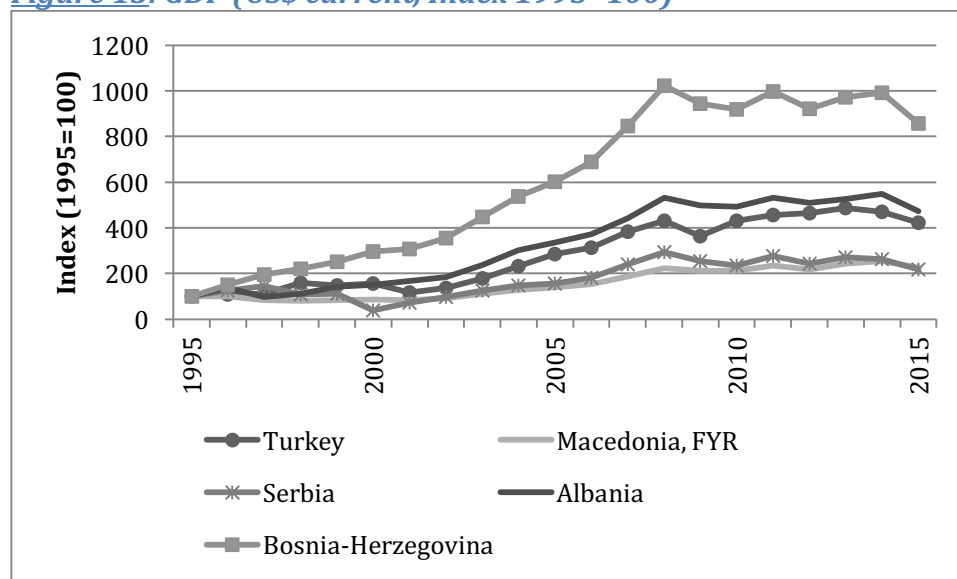


Source: Authors' elaboration based on the World Bank database.

Note: Data for 2015 has been calculated by applying the rate of growth of the last year available.

Finally, Figure 13 reports the evolution of GDP over the past two decades.

Figure 13: GDP (US\$ current, Index 1995=100)



Source: Authors' elaboration based on the World Bank database.

3.2 Econometrics results

For the purpose of this section we focus on the relationship described in expressions (6) and (7), for lack of data. As a preliminary test, some correlation coefficients have been calculated in order to assess the existence of a possible linear relationship between the variables. In view of the results of this test, we proceed to estimate econometrically the mentioned relationship in the case of Macedonia.

Since the time horizon for which data is available is not sufficient to explore the existence of a cointegrating relationship, we estimate a simple OLS model as reported in Table 4. For estimation purposes, relation (7) was estimated by means of the domestic credit to private sector by banks in % of GDP, which is only a preliminary approximation, but captures both elements of the volume of credit and of the lending conditions. In order to avoid multicollinearity issues, the GDP indicator has not been included in the estimated model. The estimation of an individual behavioural model is preferred to the utilisation of cross-sectional or panel data techniques since there is a considerable heterogeneity across the countries under consideration.

Table 4: Econometric estimates

L_EMP	Coefficient ¹²
Constant	2.9894
L_SYLOS (-2)	0.0600**
L_EMP(-1)	0.7614***
R-squared	0.8746
LM (1)	3.5854 (0.0826)
LM (2)	3.1207 (0.0844)
White test	0.7414 (0.5833)
ARCH (1)	0.0144 (0.9061)
ARCH (2)	0.1677 (0.8477)

Source: Authors' elaboration.

Provisional conclusions

This is a work in progress and, at this stage, the conclusions can only be provisional. However, the fact that a good statistical fit between employment and credit has been found for Macedonia is encouraging to continue work on the subject.

¹² ***, ** and * indicate statistical significance and rejection of the null at the 1, 5 and 10 percent significance levels, respectively. In the bottom part of the table numbers in parentheses show the lag(s) of the relevant variable.

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Appendix: Data sources

Table 5 provides an overview of the main data sources that have been used for the empirical analysis presented in Section 3.

Table 5: Data sources

Variable	Data source
Domestic credit to private sector by banks (% of GDP)	World Bank. World Development Indicators database.
Compensation of employees (% expenses)	World Bank. World Development Indicators database.
GDP (constant LCU)	World Bank. World Development Indicators database.
GDP (current LCU)	World Bank. World Development Indicators database.
GDP (current US\$)	World Bank. World Development Indicators database.
Firms using banks to finance investment (% of firms)	World Bank. World Development Indicators database.
Firms using banks to finance working capital (% of firms)	World Bank. World Development Indicators database.
Lending interest rate (%)	World Bank. World Development Indicators database.
Employment to population ratio, 15+, total (%) (modelled ILO estimate)	World Bank. World Development Indicators database.

Source: Authors' elaboration.