Accounting and Management Information Systems
Vol. 17, No. 4, pp. 566-590, 2018
DOI: http://dx.doi.org/10.24818/jamis.2018.04003

Financial performance of loan and guarantee funds in Poland. How business elements influence it?

Halina Waniak-Michalak [a,1], Jan Michalak [a] and Edyta Gheribi [a]

[a] *University of Lodz, Management Department*

Abstract. The main aim of the article is to evaluate performance of loan and guarantee funds in Poland. The system of SMEs support through loans and guarantees in Poland was created 24 years ago and it is ready for assessment. In many other countries similar institutions operate, however the question: How stable are the funds? "has not been asked yet. We analyze the elements of business models that influence the financial performance of researched organizations focusing on value proposition, channels, resources as well as some external factors (the region in which the fund operates.). To evaluate the financial performance of loan and guarantee funds we used data from financial statements for the year 2015i of 59 loan and guarantee funds (all funds that sent their financials for 2015 to the National registry in Poland). We observed that the level of the support provided by loan and guarantee funds in Poland is still relatively low. Most of researched funds are liquid but attain very low profitability. We found a significant positive impact of the width of value proposition, high quality of information channels, amount of resources and partnerships with financial institution on financial performance. We observed a positive effect of partnerships of the funds with financial institutions and high amount/ quality of resources on financial efficiency of funds. Finally, we noted also a negative influence of diminishing resources on financial stability (measured with the current ratio, but not with the default rate).

Keywords: small and medium enterprise, finance, loan funds, equity gap, guarantee funds, efficiency, support, system, business model

JEL codes: G2, H2, O16

[1] *Corresponding authors*: Department of Management, University of Lodz; Matejki 22/26 90-237 Lodz; tel. (+48)42-635-52-24; email addresses: halina.michalak@uni.lodz.pl, jmichal@uni.lodz.pl, edyta.gheribi@uni.lodz.pl

1. Introduction

Small firms are likely to face hindered access to external financing due to lack of adequate collaterals and limited financial track records. Banks often decline credits to SMEs as they are not able to evaluate SMEs' creditworthiness or to estimate risk of credits for such firms to be to high (Berger & Udell, 1990). Higher financial risk for creditors connected with financing small and medium-sized enterprises (SME) stems also from the opinion that SMEs' managers have lower investment planning skills i.e. they do not use simplified or even no, competition analysis, cash flow analysis and environmental impact assessment.

Credit rationing is a phenomenon existing on loan markets due to the imperfect information environment. Banks making credit decisions consider the interest rates, the riskiness of loans as well as how their decisions subsequently affect the riskiness of a loan due to an adverse selection and/or moral hazard (see Stiglitz & Weiss, 1981). Besanko and Thakor (1987) argue that imperfect information setting leaves the potential for good borrowers with insufficient wealth to face rationing in the credit market. This leads to the phenomena of capital gap, which is the amount of money needed to fund the ongoing operations and investments of companies mostly including SMEs. Capital gap phenomenon is used to justify government intervention in credit markets relevant to smaller firms, via investment subsidization, credit subsidization and credit instruments including loan guarantees.

Many authors, stress that there still exists the problem of difficulty in /limited access of SMEs to external capital, especially to commercial sources of financing (Biernat & Planutis, 2013). They are not able to obtain the credit at all or the cost of the credit is much higher than for other companies (Duan *et al.*, 2009; Hans-Joachim, 2003).

Many direct governmental credit subsidization programs achieved limited success or even turned out to be failures (see Zia, 2008). On the contrary use of financial instruments including loan guarantee programs have been successfully implemented in numerous countries (see Beck *et al.*, 2010; Boschi *et al.*, 2014; Honaghan 2008; Uesugi *et al.*, 2010).

Guarantee funds provide guarantees for credits and loans considering the risk of insolvency of the company (Sanneris, 2015). They assist customers in completing the formalities associated with obtaining the credit, organize additional training, and also take the responsibility of monitoring the borrower in order to strengthen the cooperation with banks. The main role of the guarantee funds was to reduce imperfections in the market resulting in higher cost of capital for small and young companies (Garcia-Tabuenca & Crespo-Espert, 2010). However, as some researchers indicate, guarantees for SMEs have better impact in less developed regions (Armstrong *et al.*, 2014) and in case weaker companies (Garcia-Tabuenca &

Crespo-Espert, 2010). Also, advantages of the guarantee are not reached fully by all companies receiving a guarantee. The biggest beneficiaries of subsidized guarantees are the weakest companies (smallest and in the worse situation). However, subsidized guarantees and loans do not reduce their financing costs until the moment when they reach the level of development of other companies (Garcia- Tabuenca & Crespo-Espert, 2010: 114).

According to the European Association of Guarantee Funds, a guarantee scheme for small and medium-sized enterprises has a positive impact on access of SMEs to credit and loans (Zecchini & Ventura, 2009) and their performance (Jae Won Kang & Heshmati, 2008; Riding *et al.*, 2007). Other authors confirm that enterprises that received credit guarantees increased their ability to survive in the long time, however not to increase their R&D spending (Oh *et al.*, 2009: 335). The most important benefits of guarantees as the tool of support of SMEs are:

- level of guarantees offered (up to 80% of the loan), which should result in the increase of loans available for small and medium-sized enterprises, especially in times of crisis or in case of riskier projects;
- reduction the risk for banks, which in the case of smaller equity of SME should reduce the consequences of the Basel III regulations and increase the access to banking capital for SMEs;
- the spread for SMEs, however, is not significantly lower just because of the guarantee (Ughetto *et al.*, 2017: 334);
- the guarantee is associated with additional analysis of the project and the financial situation of the borrower, which reduces the risk of human error and subjectivism.

Guarantee funds offer guarantees of loans and credits granted by banks and non-banking institutions, which have signed a cooperation agreement with guarantee fund. Beck *et al.* (2010) found a large variation in functioning of loan guarantee funds around the world including their organizational structures, risk management and pricing mechanism as well as in the role of private and public sectors. They observed also that older schemes are more likely to be government funded and managed and also have higher loan losses. Therefore, their efficiency and financial stability play a crucial role in evaluating the whole system of SME.

The process of guarantee application depends on the given fund a borrower can apply for a guarantee in a bank or in an institution that provides a guarantee, a bank can make a decision if a borrower can receive a guarantee or a guarantor (Riding *et al.*, 2006: 48). In some countries the capital of the guarantee funds is paid by enterprises (mutual guarantee funds) or by private or public entities.

The aim of the article is to identify and evaluate the impact off actors (elements of business models) influencing financial performance of loan and guarantee funds in

Poland. The findings may be important in evaluation of different types institutions offering SMEs financial instruments and help to find reasons of success or defeat of programs directed to SMEs. It is crucial to find a way to satisfy SMEs need and keep institutions providing guarantees and loans financially stable in the same time (Kuo *et al.*, 2011: 207). Our paper fills the research gap in evaluation of financial performance of institutions supporting SMEs and factors influencing their financial situation.

Findings of the research will be important to design an efficient system of support for SMEs and to formulate good practices in this field. The research is financed by National Science Center in Poland and is a part of a project titled "Financing of the development of loan and guarantee funds" – grant number 2016/23/B/HS4/00348.

2. Guarantee and loan funds in Europe

In the perspective 2020 UE decided to enhance the use of financial instruments (credits, loans, venture capital, guarantees) as the support for SMEs instead of grants. The reason for this change of focus-strategy was low efficiency and low leverage effect of grants. Some beneficiaries misused granted donations were sometimes and entrepreneurs made faulty decisions just to receive money from UE. They often tried to adjust their investments to the scope of projects financed from the UE program, resulting in misdirected investments/ suboptimal investment decisions.

As the results of former research researches show, small companies are more willing to use loans instead of venture capital because they don't want to share their success fruits with external investors (Hughes, 1997: 164).

In many countries the most important tool of aid for SMEs are guarantees, while in Poland for instance, loans are much more popular among SMEs than guarantees. Usually, loan and guarantee institutions in addition to financial instruments offer training and consultancy. These services are mostly financed from EU funds and the budget of the State. In other countries than Poland, loans or guarantees are distributed by the governmental agencies or bank institutions. They were created to support entrepreneurship, to increase a number of start-ups and expansions and change banks attitude to lending, so they should concentrate more on consumer relations than on financial analysis of the company and assets valuation (Cowling, 1998: 157).

The country where the non-banking guarantee funds are the most widely developed are France and Italy. In Finland, in turn, where FINNERA - the most sophisticated network of loan funds exists, can be an example of a country where loans are very important support instrument for entrepreneurs. In the UK guarantees and loans are co-financed by the government but distributed by private organizations, like Black Country Reinvestment Society[ii], Business Enterprise Fund[iii], Princes Trust, or Let's

Do Business (South East) Group Limited with 20 years of experience. Under the program called British Business Bank since 2009. In years 2009-2014 over 21 thousand loans worth £2192 million secured by government guarantees were granted. The average loan secured by this program amounted to 102.1 thousand£ during this period.

The schemes of support for SMEs in different countries vary in many aspects. The most common differences in guarantee and loan schemes are in basic and supplementary fees for the financial instrument but also in eligibility criteria and level of the support. As examples we chose three countries with three different organizations of the system of loans and guarantees for SMEs: Austria, Denmark and France. The detail comparison of the schemes is presented in the appendix 1.

In Austria, there are various institutions offering loans and guarantees. Some were financed by the government; others were created by banks. The guarantee limit does not exceed 80%, but further conditions, such as the duration and amount of the guarantee or loans, vary from one institution to another. All of them also offer advice services. In case of loans, the government covers part of the costs, with the result that the interest rate of the loan may be lower than the market rate. There are institutions that support selected sectors of activity, i.e. Österreichische Hotel-und Tourismusbank GmbH (ÖHT), which provides loans and guarantees to tourism companies, Österreichische Kontrollbank AG (OeKB), which provides funding to export companies and ERP Fund, which provides financial support to entrepreneurs using new technologies or implementing research results. Loans granted by the ERP Fund are preferential.

Vaekstfonden, a fund offering loans and guarantees for small and medium-sized enterprises and seed capital for innovative ventures, operates in Denmark. In order to strengthen the effects of the activity, in 2011 a fund of Danish Growth Capital (Vaekstfonden) funds was established as a state legal entity. One of the key products of Vaekstfonden is subordinated loan, which is an indirect form of financing between the equity and debt. These loans are secondary to other liabilities. In a case of the bankruptcy of the company, it takes place in favour of the donors of the subordinated loan after other claims have been satisfied, but before the payment of the capital invested by the owners. It is an instrument designed for entrepreneurs planning the development of the company, and whose current financial situation does not allow for obtaining a sufficient amount of credit. This loan is often at a higher interest rate than bank loans, but also has a lower cost of capital than venture capital or share issue. Guarantees for loans of up to DKK 2 million can cover up to 75% of the capital received by the company.

In France, there acts a governmental organisation, the Bpifrance development bank, which provides guarantees, loans. It operates as an intermediary in contacts between

entrepreneurs and banks in order to obtain the required financing for companies on convenient terms. Bpifrance has branches in each region of France and its offer is adapted to the requirements of entrepreneurs and conditions of availability of financing prevailing in the region. In addition to Bpifrance, the guarantees are provided by SOCAMA (la Fédération Nationale des Socama), a mutual credit guarantee fund having 26 local units (funds) in France. At present, it offers guarantees for loans granted by cooperative banks (banques populaires) for start-ups, guarantees for companies undergoing restructuring and for companies planning to develop their activities. For granting a guarantee, a fee is charged for cooperation, share premium and management costs for each member. SOCAMA is supported by experts selected by the Chamber of Commerce and Crafts, the Chamber of Commerce and Commerce and other business organisations. These experts assist the managers of local funds in the processing of credit applications from cooperative banks supported by SOCAMA. Each year, SOCAMA provides guarantees of between 25 000 and 30 000 with a value of between EUR 700 000 and 900 million.

As the appendix 1 presents, the biggest support for SMEs is offered in France, where both the guarantees and non- bank loans for SMEs are provided. However, in many countries usually, even if the loans are provided, the loans support set-ups, so the mature companies may use only the guarantees to get access to bank financing.

Different situation is in Poland, where loans support both start-ups and businesses existing on the market for many years. Usually, the funds do not prefer any sector, however businesses from tobacco or hazard industries can't use the support. The Even that, the value of an average loan in Poland is much lower than loans in other counties, even if the differences in prices in Poland and developed countries are taken into consideration.

3. Loan and guarantee funds in Poland

The system of loan and guarantee funds in Poland was created in 1994 and it's still active contrary to other countries, like Tunisia where the system failed (Bechri *et al.*, 2001). In Poland and other countries loan funds and guarantee funds are very often co-financed from the UE sources, governmental sources and private money. Most of loan and guarantee funds in Poland were created in the 1990s from the funds of financial support programs for SMEs as financially separate, but not organizationally loan funds. These funds were initially run by foundations or public sector entities. Gradually they transformed into separate legal entities: limited liabilities companies (not operating for profit) chambers of commerce, foundations and associations.

Currently, according to the data of National Association of Guarantee Funds, 87 loan funds and 44 guarantee funds operate (at the end of 2015) in Poland. The number of loan funds and loans granted decreased suddenly in 2010 as a result of the exclusion from the loan funds those of the Mikro Fund, which due to the decision of the Polish

Financial Supervision Authority from 2009 obtained the status of a banking institution (Chart 2). The total capitalization of loan funds in 2015 amounted to PLN 2.7 billion. and the capitalization of guarantee funds was only PLN 0,9 billion. The difference results from lower capital needs of guarantee funds and their lower number (Figure 1).

Some loan and guarantee funds operate within the National System of Services for Small and Medium-sized Enterprises, which mission is to support the development and promotion of entrepreneurship. These funds offer consultancy for companies in the areas of innovation, environmental protection, financial management, energy management, the use of information technology, marketing and sales as well as loans or credit guarantees.

Until 2007, the main source of financing of loan and guarantee funds were mainly funds from the EU SOP ICE program. In 2007, the task of financing the development of this type of financial instrument was transferred to the local government level. Each region (voivodeship) in Poland created its own programs for financing institutions or instruments focused on the development of entrepreneurship.

As shown in figures, in the years 2004-2015, the value of guarantee capital was systematically growing, however the capital of loan funds increased much more. The cause of the situation was an expansion of loan funds as a consequence of an inflow of UE funds in the perspective 2007-2013. At the same time, an increase in the value of guarantees and loans was growing as well, in consequence of easing the access to external funding.

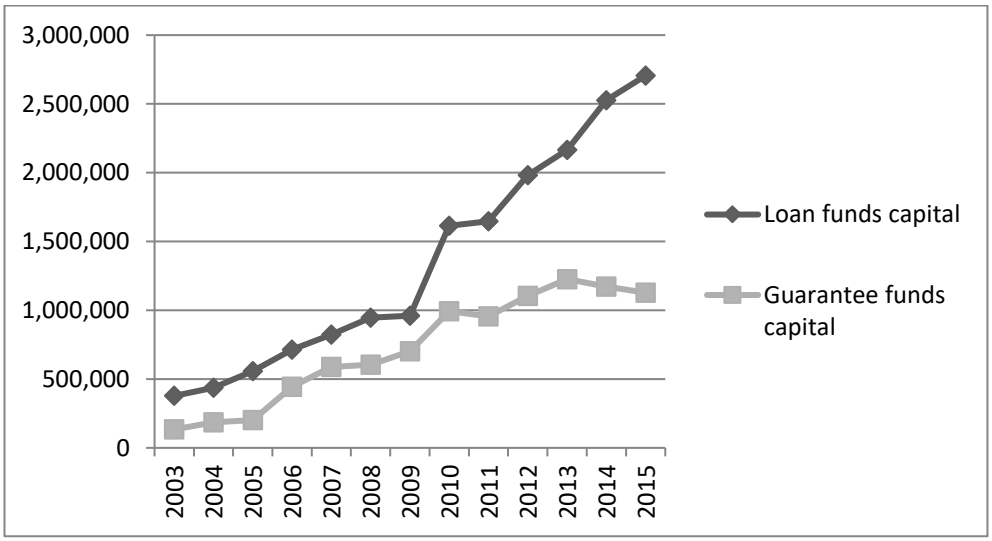

Figure 1. Capital of loan and guarantee funds in Poland in the years 2003-2015
(Source: own elaboration on the basis of data of Polish Association of Loan Funds and National Association of Guarantee Funds)

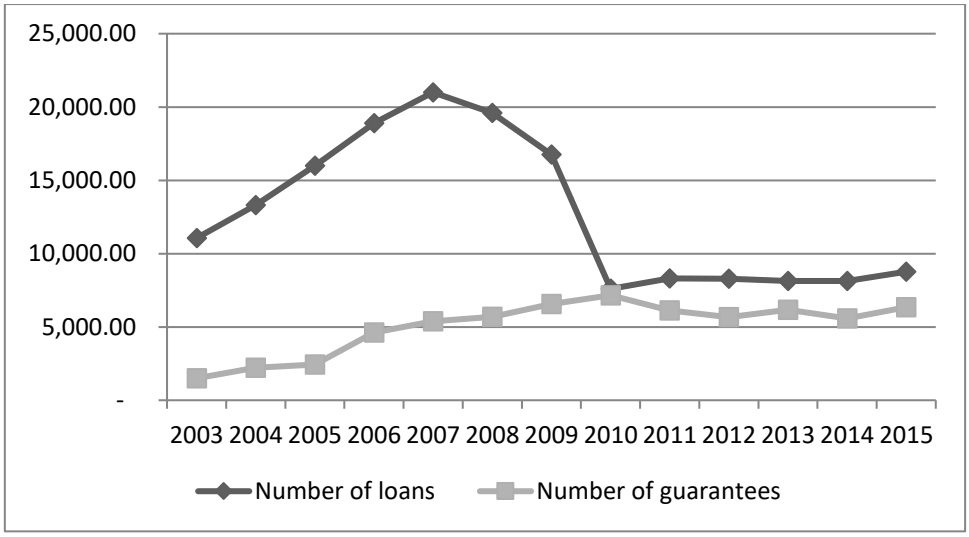

Figure 2. Number of loans and guarantees in Poland in the years 2003-2015
(Source: own elaboration on the basis of data of Polish Association of Loan Funds and National Association of Guarantee Funds)

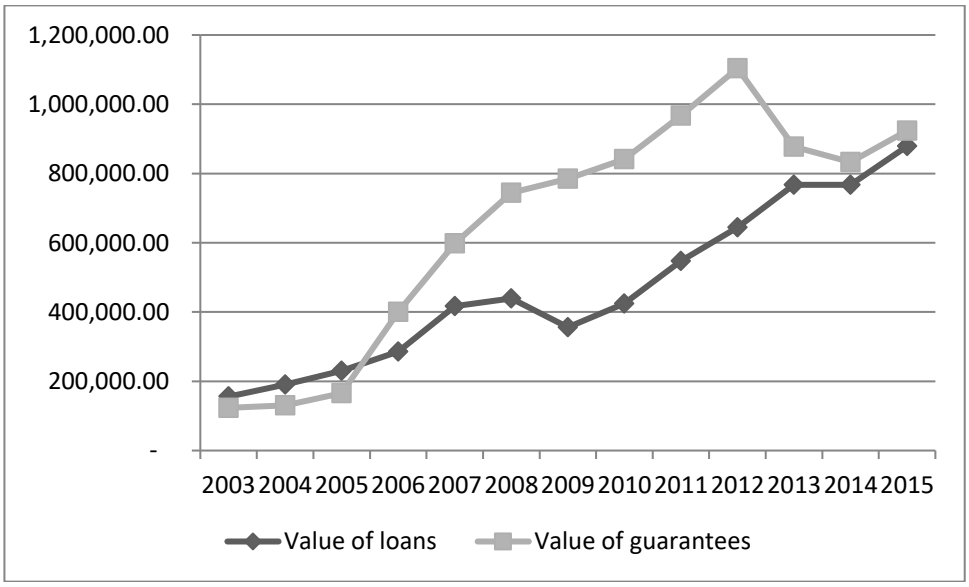

Figure 3. Value of loans and guarantees in Poland in the years 2003-2015
(Source: own elaboration on the basis of data of Polish Association of Loan Funds and National Association of Guarantee Funds)

Moreover, the level of the support provided by loan and guarantee funds seems still unsatisfactory. It consists only 0,5% of the value of bank loans granted to SMEs on normal conditions (Table 2). Then arises the question how the efficiency of the funds might be improved? Are the business models used by the funds to blame? We will try to answer the question in our further analysis of performance the funds and the relation of their results and business models elements.

Table 2. Value of non-bank loans and guarantees in Poland

Value of loans in PLN	Value of guarantees in PLN	Value of bank loans for SMEs in 2015 in PLN	Bank loans granted in a result of a guarantee of guarantee funs in PLN	Total support of loan and guarantee funds in %*
878,828,521.80	761,211,000.00	184,831,000,000.00	951,513,000.00	0,48%

*(loans + bank loans secured with the guarantees)/ bank loans without guarantees
(Source: Own elaboration on the data of Polish Association of Loan Funds and National Association of Guarantee Funds)

Guarantee and loan funds in Poland operate as non-for-profit institutions. However, they operate in a long-term and the requirement of self-financing force the funds to charge SMEs for guarantees and loans granted and take care about financial stability. Loans and guarantees in Poland are granted by non-banking organizations operating as non-profit capital companies, foundations, chambers of commerce, associations. Most of loan funds serve also other services like consulting for companies, help in innovation implementation, environmental protection, financial management, energy management, use of information technology, marketing and sales.

Loan and guarantee funds in Poland usually aid SMEs operating in the region preferred by a fund (usually the region where the fund has its office). Beneficiaries have to fulfill tax liabilities timely, regulate social insurance payables and they can't conduct activities defined as harmful to the environment or unethical (i.e. hazard or tobacco production). Loans and guarantees may be destined for investments or operating activity or mix of these goals.

Some loan and guarantee funds in Poland participating in the JEREMIE initiative offer special conditions for borrowers like lower interest rates, fees and contribution of the enterprise.

Most loan and guarantee funds don't limit the scope of the investment, so they don't indicate what kind of investments can be financed with the loan (i.e. the purchase of fixed assets, renovation, acquisition of real estate, etc.). The offer is wide and the financial conditions are differentiated. Moreover, start-ups are excluded. Companies

wishing to use the non-banking loans should be able to document duration of the activity longer than three months.

Non-banking loans still are less popular then bank credits. In the recent years, non-bank loans were more expensive than bank loans. It may mean that customers of these institutions might have had problems with an access to a bank financing if they decided to use more expensive source of financing.

4. Financial performance and business model of loan and guarantee funds

Performance is a broad and multifaceted concept (Kaplan & Norton, 1996; Richard *et al.*, 2009). Traditionally performance of financial institutions is perceived through the lens of the return from invested capital and risk associated with the lending policy (Froot, Stein 1998). In the case of loan and guarantee funds discussed in the paper performance assessment criteria differ. As the loan and guarantee funds are mostly not-for-profit entities their performance is evaluated mainly basing on two criteria matching the research question: How stable are the funds?

Stability of the funds stems from the idea of self-financing of loans and guarantees funds. Stability is negatively affected by the wrongly granted loans and guarantees, lack of money needed to grant new loans and guarantees, inability to cover the costs of functioning as well as high indebtedness. Stability is measured by the percentage of lost loans or guarantees paid, high negative loses, high debt ratios and low level of cash and cash equivalents.

Performance of loan of guarantee funds depends on many factors including: macroeconomic situation, management quality, procedures used in the entities. We argue that the performance depends also on the business models and their elements used by loans funds. We follow the results of the research of Weill *et al.* (2006) and Zott and Amit (2007) that show that differences in the business model impact the performance of organizations using it.

The two most common approaches (Nielsen & Lund, 2012) to the understanding of the business model concept are:

- a narrow approach – in which the business model is understood as a way of generating revenues;
- a broad approach – in which the business model is understood as a way of creating value by the business.

In a narrow sense, the business model was defined by Amit and Zott (2000). According to their definition, a business model means a specific way, a method in which an entity using it can generate revenues. In the broad meaning according to

Afuah (2004: 2), a business model is a set of actions that the entity implements, the manner in which it implements them and the moment of their implementation, using resources to offer benefits to clients who expect them in such a way that the unit has made a profit. Various authors proposed numerous and diverse lists of business model elements (mentioned in the table below).

Table 3. Components of the business models

Source	Specific components
Gordijn *et al.* (2001)	Actors, market segments, value offering, value activity, stakeholder network, value interfaces, value ports, and value exchanges
Linder and Cantrell (2001)	Pricing model, revenue model, channel model, commerce process model. Internet-enabled commerce relationship, organizational form, and value proposition
Petrovic *et al.* (2001)	Value model, resource model, production model, customer relations model, revenue model, capital model, and market model
Afuah and Tucci (2001)	Customer value, scope, price, revenue, connected activities, implementation, capabilities, and sustainability
Weill and Vitale (2001)	Strategic objectives, value proposition, revenue sources, success factors, channels, core competencies, customer segments, and IT infrastructure
Ostervalder & Pigneur (2009)	Value Proposition, Customer Segments, Channels, Customer Relationships, Cost Structure, Key Activities, Key Resources, Key Partners, Revenue Streams

(Source: Based on Morris *et al.*, 2005; Ostervalder & Pigneur, 2009)

We decided to investigate the impact of the following element of business models: value proposition, channels, resources and partnerships on performance. They are common to most of the mentioned business model elements typologies.

Value proposition is critical for performance of loan and guarantee funds. Width and elements of value proposition influence the decisions of customers (SMEs) whether to use or not the offer of a fund. Elements of value proposition that are important for SMEs are: width of the offer (number of the instruments offered, provision of other services – ie. consulting services), prices (fees) and other elements of the offer including maximum period of a loan or a guarantee agreement.

One of the problems that SMEs face is low knowledge on the possible sources of financing (including the subsidized financing provided by loan and guarantee funds). Therefore, crucial element for closing the capital gap are information channels

(Cowling, 1998). Nowadays, most efficient information channels (relatively low cost to the effect) are web pages and social media). Former research show that loan and guarantee funds face the problem of not sufficient resources to properly manage their operations (Waniak-Michalak, 2016). High available funds without reasonably well remunerated people managing are not able to close the gap. Performance of organizations including the loan and guarantee funds depends also on cooperation with partners like banks and technological parks. These institutions may help to find borrowers of non-bank loans among their clients.

5. Methodology and hypotheses development

To evaluate the financial results of loan and guarantee funds we used data from financial statements for the year 2015[iv] of 59 loan and guarantee funds (all funds that sent their financials for 2015 to the National Registry in Poland). All financial statement were purchased from the Infoveriti Database[v]. Then, we collected the information on the business models from the websites of these organizations and reports of the National Association of Guarantee Funds in Poland and Polish Association of Loan Funds.

The performance indicators of loan and guarantee funds we assess through following measures of their activity in 2015:

- return on sales;
- quick ratio;
- cash ratio;
- return on equity;
- return on investments;
- total debt/equity;
- total assets/equity;
- return on assets;
- log of sales;
- number of loans and guarantees granted;
- value of loans and guarantees granted;
- number and value of guarantees paid.

As business models elements and their proxies are listed in the appendix 2[vi]:

5.1 Research questions

We formulated five detailed research questions to answer the main question ***how different elements of business models*** (including width of value proposition, the quality of information channels and cooperation with partners or possessed resources) ***affect financial performance of loan and guarantee funds in Poland?***

They were based on the results in this field that failed to find a relationship between the number and value of outstanding loans granted by Polish loan funds and the number and type of additional services they offer (Waniak-Michalak, 2016). Answering the questions will allow us to conclude whether a guarantee activity or lending activity is important for the financial performance of loan and guarantee funds and what additional services would help them remain financially stable. We formulated our questions on the basis of other studies and the correlation analysis of results of the loan and grant funds and elements of the business models.

Former research results suggest that loan or guarantee funds use government grants to finance their activity can have higher risk of default, while private financing may force managers of these funds to use the money in a more efficient way (Kuo *et al.*, 2011). Also, if private institutions are shareholders of a loan or a guarantee fund, they may help it to receive better financial results (revenues and current ratio) as a consequence of a support provided by the private shareholder like: advisory, promotion of the fund activity, additional inflows of the capital. Share of private investors in a capital of the fund may influence positively the number of loans granted. It may result from the marketing support of the private shareholders for the fund. Very often, clients of the banks that didn't go successfully through the credit worthiness assessment process are sent to the cooperating guarantee fund. The facts encouraged us to ask the question: ***Is the partnerships with banks and other private institutions in guarantee funds positively related to their financial*** **performance?**

Funds that operate within a technological park have higher probability to find borrowers (beneficiaries) among the users of the technological park. Therefore, the revenues and profits should be higher for the funds. In the same way we can explain the correlation between consulting services and revenues and return on assets.

Consulting services provided by the guarantee or a loan fund may be a factor influencing in a positive way the number of granted financial instruments. The loan or guarantee funds may find borrowers among SMEs managers using consulting services. However, a form of a technological park may be an obstacle for granting high number of loans. We posit that, beneficiaries of technological park service desire a different form of financing and of a higher value than loans, like: venture capital of business owners.

Above facts let us formulate the research question: ***Is the width of value proposition offered by the non-banking providers of loans and credit guarantees positively related to their financial performance?***

Access of SMEs to the information on loans or guarantees (on the website) should influence positively the revenues of the funds and the number of instruments granted. Profitability or value of the instruments will depend more on the loans and guarantees conditions, like the maximum provision, period of the loan or guarantee or limits for value of the loan or guarantee in comparison with expenses of the fund.

Number of loans and guarantees granted could be increased with the use of following tools: profile on Facebook, Website of the fund, visibility in Web (number of findings). The level of fee for loans and guarantees discourages entrepreneurs to take big loans, so the level of fee should be positively correlated with number of loans and guarantees but negatively with their value. An example of such situation is one of the most active loan funds in Poland, Micro Fund, that provides mostly small loans with the interest rate for the loans 1,5 times higher than the interest rate in a bank. That's why we want to answer the question ***if the quality of information channels used by loan and guarantee funds in Poland is positively related to their financial*** **performance?**

We asked the fourth detailed research question: ***Is the amount of resources positively related to the financial performance of loan and guarantee funds in Poland?*** to know if resources of loan and guarantee funds have any impact on their efficiency. Former research (Waniak-Michalak, 2016) results show that such funds in Poland are highly underfunded – it means most of them do not have enough resources to function effectively.

Receiving the grant by a loan or guarantee fund usually allows to cover a part of administrative expenses with a grant, then the profit of the fund may increase. Grants may allow to increase the lending or guarantee activity and in this way rise revenues and profits as a result of the use of effects of scale.

As grants for loan and guarantee funds are important source of financing we posit, that the value of the UE aid should influence the number of value of financial instruments granted. Public funds received by loan and guarantee funds may attract other private sources of financing and increase bank's trust to the instruments granted by guarantee funds. The public funds (i.e. UE grants) may convey a positive signal on the financial situation of the funds and in this way reduce a risk of the private investor (Columba *et al.*, 2010).

The last research question is ***how different elements of business models affect the default rate of guarantee funds in Poland***. Previous studies (Beck *et al.*, 2010) showed that the age of a guarantee fund is positively associated with the default rate. We posit that availability of human resources and source of financing is important. Guarantee funds using grants may be less stressed to manage the funds effectively. Lack of sufficient number of employees is often an obstacle to verify applications of SMEs deeply. We measure the default rate as a share of paid guarantees in a number or value of active guarantees. Beck *et al.* (2010), found out that the age of the guarantee institution is positively correlated with a level of loses, however we also propose that number of employees and their remuneration may be important. If the funds have insufficient number of employees than less attention may be paid to assess the creditworthiness of the client.

5.2 Results and discussion

Descriptive statistics (presented in appendix 3) on dependent variables reflecting performance enable us to assess the efficiency and stability of the activity of loan and guarantee funds.

The analysis of loan and guarantee funds' financial results proves that most of loan and guarantee funds in Poland is liquid, and they suffer from low profitability. Additional financing provides necessary money to cover their losses. It means that the activity of these funds may be threatened in case of a limitation of EU financing for development of loan and guarantee schemes. Some funds received outstanding results measured by liquidity rations and debt ratio. It was the consequence of a small size of their activity in comparison with a value of received grants for the scheme. Some types of financing received by the funds are refundable so they are presented in the balance sheet of a loan or guarantee fund in the position of liabilities increasing in the same time the debt ratio.

The preliminary analysis of descriptive statistics allows us to evaluate initially non-financial outcomes of the activity of loan and guarantee funds. Loan and guarantee funds grant less than 100 loans or guarantees per year on average. Data gathered by Polish Association of Loans Funds and National Association of Guarantee Funds show that total number of loans in 2015 was 8772 and guarantees for bank loans 3939. Such volumes compared in relation to 1.7 million of active SMEs in Poland show that use of loans provided by loan and guarantee funds in Poland is very limited.

The correlation analysis results show that among all financial indicators only revenues, ROA and current ratio are significantly linked with some elements of business models: including channels and partners.

We found also a significant positive correlation between revenues and grants (log) and between a return on assets and grants (log). Surprisingly, the maximum theoretical value of a single loan or guarantee is negatively correlated with revenues, but the maximum duration of a loan or a guarantee agreement is correlated positively with revenues. We observe also that a number of loans and guarantees granted in a year is correlated with these variables in reverse. It may result from a lower relative fee for a higher loan or guarantee that may decrease total revenues and increase number of instruments granted. We conclude that SMEs owners are not willing to indebt their businesses for a long period of time that may mean also higher fees for a loan or a guarantee.

We observed a negative correlation between dummy variable – profile on Facebook and independent variable – revenues. It may mean that profile on Facebook is created in response of unsatisfactory financial results, to use a free tool of public relation and promote the fund's activity.

As we expected, younger funds had higher liquidity (measured with current ratio) than older funds, but lower revenues. As older and younger funds granted similar number of loans and guarantees per year we conclude that the use of capital increases In further steps, we used an information on correlation between variables to form regression models explaining the relationship between financial results and elements of business models of loan and guarantee funds.

The financial situation of loan and guarantee funds may be also measured with a default rate measured with number and share of paid guarantees in active guarantees (guarantee agreements still valid).

We found also the significant correlation between level of invested capital and other variables only for guarantee funds. The correlation analysis let us conclude that the level of involvement in a guarantee activity depends mostly on the share of salaries in operating expenses, region where the fund operates, value of grants received and the age of the fund.

Region where a loan or a guarantee fund operates turned out to be important only for a value of loan and guarantees. The correlation sign suggests that in regions less developed, loan and guarantee funds grant bigger loans and guarantees. It may reflect the capital needs of SMEs owners in less developed regions.

We built three regression models (OLS) explaining financial performance and stability obtained by loan and guarantee funds in Poland: revenues (log), return on assets and current ratios basing on our hypotheses to answer the detailed research question 1, 2 and 3.

Table 5. Regression models for financial results of loan and guarantee funds

Model 1		**Model** 2		**Model 3**	
Dependent variable	**Revenues (log)**	**Dependent variable**	**ROA**	**Dependent variable**	**Current ratio**
Independent variables:		**Independent variables:**		**Independent variables:**	
TP	.009 (.929)	**CS**	**.302 (.046)****	**AY**	**-.392**
CS	-.002 (.978)	**Grants log**	.157 (.231)	**SPF**	**(.005)*****
W	**.534 (.000)*****	**TP**	.044 (.760)	**VLG**	.164 (.215)
AW	.031 (.788)				-.132 (.308)
SPF	**.287 (.005)*****				
FP	-.046 (.650)				
MLG	.040 (.674)				
MVLG	-.034 (.709)				
Grants log	**.482 (.000)*****				
AY	**.356 (.002)*****				
R	**.273 (.003)*****				
R square	.732	**R square**	.157	**R square**	.205
Adjusted R square	.653	**Adjusted R square**	.111	**Adjusted R square**	.161

* significance on the level 0.1
**significance on the level 0.05
*** significance on the level 0.01

Basing on the results of OLS regression results we conclude that high quality of information channels resulted in the access of SMEs owners to the information on loan and guarantee funds' activity, influences mostly revenues of loan and guarantee funds. However not every type of the information channel quality proxy turned out to be significant. Only the number of information presented on the fund's website is significantly associated with revenues of the organizations. The fact allows us to answer positively the question if the quality of information channels used by loan and guarantee funds in Poland is positively related to their financial performance.

Revenues of loan and guarantee funds in Poland depend also on grants received, age and region where they operate. Funds receiving higher grants have higher revenues, so it means that amount of resources is positively related to the financial performance of loan and guarantee funds in Poland. There are a few possible reasons of the relation. Firstly, some funds may recognize grants part of grants received (non-refundable funds) as their revenues in the given year. Secondly, grants may allow to increase the lending activity, however the regression including number and value of financial instruments granted does not confirm this hypothesis. Loan and guarantee funds generate better results in less developed regions. In such regions the problem of capital gap may be more visible and funds may use this situation to provide more loans and guarantees. Moreover, higher risk attributed to SMEs projects in less developed regions may cause higher fees and then higher revenues for funds.

We also posited that the share of private institutions[vii] (banks and enterprises) influence positively the liquidity of loan and guarantee funds, but these elements of the business model influence on financial performance is not significant. Only the age of the loan or a guarantee fund is a significant variable. It means that younger institutions do not have sufficient financing. The profitability of the funds is created mostly by consulting services. Nor the number or the value of granted loans and guarantees are important for profitability of funds measured with return on assets. Probably the consulting services help SMEs managers make more effective decisions and in this way the default rate is lower. Moreover, a part of consulting services may be paid and increase the financial result of a fund.

Concluding, our research confirms that the width of value proposition offered by the non-banking providers of loans and credit guarantees is positively related to their financial performance. The regression analysis proves, that consulting services allow to rise the profitability of the loan and guarantee funds. That's why we conclude that the partnerships with banks and other private institutions in guarantee funds is positively related to their financial performance.

The financial performance of guarantee funds may be also assessed through the lens of stability measured by the default rate which reflects the guarantees paid by a guarantee fund. We did not find a statistically significant relation between a default

rate (measured as the share of number of guarantees paid in a number of guarantees granted or as the share of a value of guarantees paid in a value of guarantees active) and other variables, like the age of the organization. Therefore, we are cannot conclude that the default rate of guarantee funds depends on the business models' elements of guarantee funds.

The inability to answer positively our last research question may result from the insufficient power of the used tests (too small sample and specific variability of default rate of guarantee funds).

6. Conclusions

The aim of the article was to is to evaluate performance of loan and guarantee funds in Poland and answer the research question: "How stable are the funds?" We analyzed the elements of business models that influenced the performance of researched organizations focusing on value proposition, channels, resources as well as some external factors (including age of organization and the region in which the fund operates).

We found out that the level of the support provided by loan and guarantee funds is still relatively low. It consists only 0,5% of the value of bank loans granted to SMEs on normal conditions. Moreover, the multiplier of guarantee funds is only 1.7, so in comparison with some countries (like Taiwan) where it reaches 20 (Kuo *et al.*, 2011) it's still low. That's why we conclude that the ability of loan and guarantee funds in Poland to close the capital gap for SMEs is still low.

The analysis revealed that schemes of loans and guarantees in Poland are liquid but suffer from low profitability. Grants from UE allow the institutions granting SMEs loans and guarantees allow to increase the value of all granted instruments and the average value of a loan or a guarantee. The consulting services increase the profitability of loan and guarantee funds measured with ROA and the share of private institutions in a capital of loan and guarantee funds in Poland increase their revenues. We did not find a business model components influencing the default rate of guarantee funds.

One of the most important business model components for loan and guarantee funds is a sufficient information on loans and guarantees on their website that the future clients may use to make a preliminary decision. Consequently, the following research questions arise: why some loan and guarantee funds do not present relevant information on loans and guarantees on their websites? Does it result from staff or organizational problems? Are there any financial constraints?

In the following months we plan to conduct a quality research to answer the questions: the survey among managers of loan and guarantee funds in Poland and a focus research with representatives of these organizations. The further research will enable us to develop the conclusions of the first phase of quantity research. The presented results' analysis has some limitations. The research covers only organizations existing in Poland. Institutional factors may influence the strength of the influence of business model elements on the performance loan and guarantee schemes in other countries. The sample covers only funds that continue their operations so there may be observed selectivity problem. Finally, some proxies of business model elements may not be the best ones, but there were the only available at the moment of the research.

Acknowledgement

The research is financed by National Science Center in Poland and is a part of a project titled "Financing of the development of loan and guarantee funds" – grant number 2016/23/B/HS4/00348.

References

Armstrong C., Craig B., Jackson W.E. & Thomson J.B. (2014) "The moderating influence of financial market development on the relationship between loan guarantees for SMEs and local market employment rates", *Journal of Small Business Management*, vol. 52(1): 126-140

Bechri, M., Najah, T. & Nugent, J.B. (2001) "Tunisia's lending program to SMEs: Anatomy of an institutional failure?", *Small Business Economics*, vol. 17: 293-308

Beck, T., Klapper, L. F. &Mendoza, J. C. (2010) "The typology of partial credit guarantee funds around the world", *Journal of Financial Stability*, vol. 6(4): 10-25

Berger, A. N., & Udell, G. F. (1990) "Collateral, loan quality and bank risk", *Journal of Monetary Economics*, vol. 25: 21-42

Besanko, D., & Thakor, A. V. (1987) "Collateral and rationing: sorting equilibria in monopolistic and competitive credit markets", *International Economic Review*, pp. 671-689

Biernat-Jarka A. & Planutis E. (2013) "Credit guarantee scheme for the SME Sector in Poland against the background of the selected EE Member States", *Economic Science for Rural Development Conference Proceedings*, Issue 30: 32-37

Boschi, M., Girardi, A. & Ventura, M. (2014) "Partial credit guarantees and SMEs financing", *Journal of Financial Stability*, vol. 15: 182-194

Cowling, M., (1998) "Regional determinants of small firm loans under the U.K. loan guarantee scheme", *Small Business Economics*, vol. 11: 155-167

Cowling, M. & Mitchell, P. (2003) "Is the small firms' loan guarantee scheme hazardous for banks or helpful to small business?", *Small Business Economics*, vol. 21: 63-72

Duan, H., Han, X. & Yang, H (2009) "An analyses of causes for SMEs financing difficulty", *International Journal of Business and Management*, vol. 4(6): 74-75

Froot, K. A. & Stein, J. C. (1998) „Risk management, capital budgeting, and capital structure policy for financial institutions: an integrated approach", *Journal of Financial Economics*, vol. 47(1): 55-82

Garcia-Tabuenca, A. & Crespo-Espert, J.J. (2010) "Credit guarantees and SME efficiency", *Small Business Economics*, vol. 35: 113-128

Hans-Joachim, G. (2003) "Transaction costs in finance and inventory research", *International Journal Production Economics*, vol. 81-81: 341-350.

Honaghan, P. (2008) *Partial credit guarantees: principles and practice. Session I. Partial credit guarantees: experiences and lessons*, Washington DC: World Bank, Financial & Private Sector Development.

Hughes, A. (1997) "Finance for SMEs: A U.K. perspective", *Small Business Economics*, vol. 9: 151-166

Jae, W.-K. & Heshmati, A. (2008) "Effect of credit guarantee policy on survival and performance of SMEs in Republic of Korea", *Small Business Economics*, vol. 31(4): 445-462

Kaplan, R. S. & Norton, D. P. (1996) *The balanced scorecard: translating strategy into action*, Harvard Business Press.

Kuo, J-C., Chen, C-M. & Sung, C-H. (2011) "Evaluating guarantee fees for loans to small and medium-sized enterprises", *Small Business Economics*, vol. 37: 205-218

Klapper, L., Laeven, L., &Rajan, R. (2006) "Barriers to entrepreneurship", *Journal of Financial Economics*, vol. 82(3): 591-629

Morris, M., Schindehutte, M., & Allen, J. (2005) "The entrepreneur's business model: toward a unified perspective", *Journal of Business Research*, vol. 58(6): 726-735

Oh, I., Lee, J-D., Heshmati, A. & Choi, G-G. (2009) "Evaluation of credit guarantee policy using propensity score matching", *Small Business Economics*, vol. 33: 335-351

Osterwalder, A. & Pigneur Y. (2009) *Business Model Generation*, Self-Published

Nielsen, C. & Lund, M. (2012) *Business Models: Networking, Innovating and Globalizing*, BookBoon

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009) "Measuring organizational performance: Towards methodological best practice", *Journal of Management*, vol. 35(3): 718-804

Riding, A., Madill, J. & Haines, G., (2007) "Incrementality of SME loan guarantees", *Small Business Economics*, vol. 29: 47-61

Sanneris, G. (2015) "Support of SMEs in Italy: Case of Confidi, experience and perspectives of evolution", *St. Petersburg State Polytechnical University Journal. Economics*, vol. 228 (5): 7-19

Stiglitz, J. E. & Weiss, A. (1981) "Credit rationing in markets with imperfect information", *The American Economic Review*, vol. 71(3): 393-410

Uesugi, I., Sakai, K., & Yamashiro, G. M. (2010) "The effectiveness of public credit guarantees in the Japanese loan market", *Journal of the Japanese and International Economies*, vol. 24(4): 457-480

Ughetto, E., Scellato, G. & Cowling, M. (2017) "Cost of capital and public loan guarantees to small firms", *Small Business* Economics, vol. 49: 319-337

Zecchini, S. & Ventura, M. (2009) "The impact of public guarantees on credit to SMEs*"*, *Small Business Economics*, vol. 32 (2): 191-206

Zia, B. (2008) "Export incentives, financial constraints, and the (Mis)allocation of credit: micro-level evidence from subsidized export loans", *Journal of Financial Economics*, vol. 87(2): 498-527

Weill, P., Mallone, T., D'Urso, V., Herman, G., Apel, T.G & Woerner, S. (2006) "Do some business models perform better than others?", *MIT Sloan Research Paper*, No. 4615-06

Waniak-Michalak, H. (2016) "Success factors of loan and guarantee funds supporting SMEs in Poland", *Preparation for the Future Innovative Economy*, available at: https://ssrn.com/abstract=2942372: 70-79

Zott, C. & Amit, R. (2008) „The fit between product market strategy and business model: implications for firm performance", *Strategic Management Journal*, vol. 29(1): 1-26

Appendix 1.

The results of loan and guarantee activity in chosen countries in 2013 in EUR

	Czech	United Kingdom	Finland	France	Hungary	Poland
All SMEs	968 121	1 649 086	224 505	2 513 679	554 886	1 794 943
micro	926 751	1 473 562	206 694	2 368 046	525 411	1 719 187
small	33 393	144 098	14 779	121 159	24 619	57 071
medium	6 613	25 631	2 429	20 140	4 052	15 484
Seedcapial (mln. EUR)	0	13	3.9	6.3	0	2.5
start-up(mln. EUR)	0.7	367	60.2	330	56	2.7
Bank Loans for SMEs in % of bank loans for enterprises	17.20%	21.8%	22%	21%	61.60%	59%
Guarantees for SMes in mln EUR	61.16	265.54	408	8 501	236	87.78
Non-bank Loans for SMEs (mln. EUR)	n.a	n.a	342	4 175	230	157.53
Non-bank Loans for SMEs In %	n.a	n.a	4%	2%	0%	0.09%
Average non-bank loan for 1 SME in EUR	n.a	n.a	1527.45	1663.78	414.50	87.92
Average guarantee for 1 SME in EUR	63.26	161.59	1822.23	3387.74	425.27	48.99
spread (between interest rate for big and small companies)	1.06%	1.31%	0.79%	1.51%	1.10%	2.5%

(Source: Own elaboration on the basis of data OECD, Polish Assoctation of Loan Funds, National Association of Guarantee Funds, Polish Financial Supervision Authority,EVCA, *OECD*(2013), *Economic Surveys*: *Belgium*, OECD, Paris, http://dx.doi.org/10.1787/eco_surveys-bel-2013-en)

Appendix 2.
Components of the business models

Variable name	Variable symbol	Element of business model
Consulting services	(CS)	Value proposition
Maximum fee (MF)	(MF)	Value proposition
Maximum number of months for a loan or a guarantee agreement	(MLG)	Value proposition
Maximum value of loan or guarantee	(MVLG)	Value proposition
Number of types of instruments offered	(NI)	Value proposition
Type of the instruments offered (1-guarantees, 2-loans, 3-both types of instruments)	(TI)	Value proposition
Assessment of the website of the loan and guarantee fund[2]	(AW)	Channels
Number of "likes" on Facebook	(F)	Channels
Profile on Facebook	(FP)	Channels
Visibility in Web (number of search findings)	(W)	Channels
Salaries share in operating costs	(SS)	Resources (employees)
Age in years	(AY)	Resources (diminishing)
Activity run within technological park (01 variable)	(TP)	Partners
Logarithm of received UE grants (grants (log))		Resources
Region where the fund operates. We distinguished four levels of development of Regions in Poland, where 1, the least developed, the most developed, 4	(R)	External factor
Share of private organizations or persons in the capital of loan and guarantee funds (dummy variable)	(SPF)	Partnerships

(The research was conducted in the period 07.2017- 12.12.2017. We analyzed the data and construct a regression model we used SPSS 24.)

[2] We assessed the website on the 5-degrees scale. The highest result was for the website on which we could find: general information on every type of financial instruments, cost of a loan or a guarantee, contact information, application documents.

Appendix 3.
Frequencies of financial results

		ROS	Current ratio	ROE	Liabilities/equity	ROA	Grants /Long Term Capital	Number of loans grantem in a year	Value of loans and guarantees granted in a year (in th.)	Default rate*
N	Valid	58	58	59	58	58	58	59	59	30
	Missing	1	1	0	1	1	1	0	0	29
Mean		-0.07	293.18	0,00	6.02	0.00	1,20	165	16,920.00	1,84%
Median		0.40	4.83	0.01	0.60	0.00	0.54	92	11,898.00	0.64%
Minimum		-3.87	0.00	-1.08	-1.00	-0.14	0.00	0	0.00	0.00%
Maximum		2.87	**6615.30**	1.19	**140.73**	0.06	9.06	981	129,702.00	14.60%
Percentiles	25	-0.10	1.20	-0.01	-0.97	0.00	0.23	27	3,003.00	0.003%
	50	0.04	4.83	0.01	0.60	0.00	0.54	92	11,898.00	0.64%
	75	0.15	327.24	0.03	2.10	0.01	1.39	210	21,453.00	1.72%

*Value of paid guarantees in a year in a value of active guarantees for guarantee funds. That's why this measure concerns only 30 organizations in the sample.

Appendix 4.
Correlation of dependent and independent variables

	revenues (log)	ROA	curent ratio	NI	Value of loans and guarantees	Capital leverage	Default rate
revenues (log)	1						
ROA	0.25	1					
curent ratio	-0.21	0.02	1				
NI	0.45**	0.01	-0.13	1			
Value of loans nd guarantees	-0.21	-0.26*	0.02	0.16	1		
Capital leverage	-0.02	-0.09	-0.06	0.07	0.08	1	
Default rate	0.10	0.02	-0.02	0.06	0.24	0.05	1
R	0.22	0.11	0.04	-0.03	-0.08	0.17	-0.19
AY	0.48**	0.26*	-0.41**	0.11	-0.31*	0.01	-0.01
grants (log)	0.60**	0.24	0.01	0.16	-0.27*	0.01	0.07
F	0.29*	0.01	-0.10	-0.01	-0.11	0.01	0.13
AW	0.51**	0.08	0.11	0.33**	-0.148	0.02	0.21
FP	0.43**	0.29*	-0.24	0.32*	0.045	0.11	0.26
W	0.36**	0.07	-0.15	0.25	-0.01	0.02	0.04
SP	0.03	-0.14	0.28*	0.31*	0.19	-0.04	0.15
SS	-0.17	-0.01	0.04	-0.08	0.20	0.59**	-0.00
CS	0.37**	0.36**	-0.24	0.09	-0.23	0.01	-0.04
TP	0.11	0.19	-0.11	0.04	-0.04	0.25	-0.06
MF	0.37**	0.20	-0.20	0.19	-0.13	-0.17	0.07

	revenues (log)	ROA	curent ratio	NI	Value of loans and guarantees	Capital leverage	Default rate
MVLG	0.19	0.08	-0.10	0.14	-0.01	0.06	0.10
MLG	0.35**	0.07	-0.03	0.11	0.10	0.02	0.09
TI	-0.25	-0.07	0.16	-0.12	0.10	-0.02	-0.02

*correlation significant on the 0.05 level
** correlation significant on the 0.01 level

Appendix 5.

Descriptive statistics of business model elements

		TP	CS	W	AW	SPF	F	FP	MF	MLG	MVLG	AY	R
N	Valid	59	59	59	59	59	59	59	59	59	59	59	59
Mean		-	-	10940.76	3.66	-	333.41	-	4.4361%	58.13	457288.14	17.12	-
Median		-	-	3680.00	4.00	-	2.00	-	3.0000%	60.00	350000.00	18.00	-
Mode		0	0	0[a]	5	0	0	1	0.00%	60.00	500000.00	21	3
Minimum		0	0	0	0	0	0	0	0.00%	0.00	0.00	0	1
Maximum		1	1	98700	5	1	7432	1	19.25%	120.00	2500000.00	24	4
Sum		10	28	-	-	18	-	30	-	-	-	-	
Percentiles	25	0.00	0.00	1780.00	3.00	0.00	0.00	0.00	1.2000%	60.00	120000.00	13.00	2.00
	50	0.00	0.00	3680.00	4.00	0.00	2.00	1.00	3.0000%	60.00	350000.00	18.00	3.00
	75	0.00	1.00	14300.00	5.00	1.00	197.00	1.00	8.0000%	60.00	600000.00	22.00	4.00

[i] Many financial statement for 2016 were not available in 2017.
[ii] http://bcrs.org.uk/loan-process/ access: 15 may 2015
[iii] http://www.befund.org/about-us/ access: 15 may 2015
[iv] Many financial statement for 2016 were not available in 2017.
[v] The site: http://www.infoveriti.pl/
[vi] The information was collected in the period 08-10. 2015
[vii] In Poland most of loan and guarantee funds are foundations or are set up by public sector organizations. Only a part of them have shareholders from a private sector