Complementarities Between Microfinance and Job Creation

Grozdančić Radmila¹, Vukosavljević Dejan², Beslač Milan³

Abstract

The objective of this paper was to research the impact of microfinance bank loans on employment generation in Serbia in 2014 with a seasonal dynamics, around which was situated the scope of the paper too as a case study. The hypothesis formulated as possible impact of microfinance bank loans in employment generation was positive. Jobs created were divided in groups of: sustained jobs, indirect, induced, second-order “growth” effects, and net job creation, with multipliers, such as the total number of jobs in an economy generated per one direct job, frequently used to assess and benchmark the job-creation effects of private sector activities. Mathematical and descriptive statistical methods are used, as well as a typical fitting measure, Coefficient of determination, for measure of fitting the trend-line with the empirical data, 88.28% of contribution towards in the prediction of created jobs dynamics, and 93.09% of contribution towards in the prediction of sustained jobs dynamics.

KEY WORDS: Job creation, Microfinance bank credit, Business cycle theory

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¹ Corresponding author, Faculty of Business Economics and Entrepreneurship, Belgrade, Serbia, e-mail: sme_rad@ymail.com
² Faculty of Business Economics and Entrepreneurship, Belgrade, Serbia, e-mail: vukosavljevic.dejan@gmail.com
³ Faculty of Business Economics and Entrepreneurship, Belgrade, Serbia, e-mail: milan.besac@galebl.com
Introduction

The microfinance institutions with their specific loans and clients provided to, have been blossomed in many countries. There are over 170 million customers whose needs have been satisfied, which number, supported by number of donors, and improving their integration in the developing financial sector and other financial services for self-employment activities is even growing especially after the good experience of Grameen Bank in Bangladesh and Banco Sol in Bolivia.

As valuable research experience about possible micro loans impact on job creation are IFC studies, EBRD study in Poland, Bulgaria, and Romania, evaluations reviewed under investment climate conducted in Brazil, Burkina Faso, Liberia, Mexico, Peru, Portugal, Rwanda, and Sierra Leone. So, the IFC information on direct jobs that were being provided in client companies in 2011 in Ghana, Jordan, Sri Lanka and Tunisia, talks about some of 2.5 million jobs. These direct jobs, judging by the indicator “number of jobs created per million dollar of project costs,” was associated with adding many more direct jobs than similar investment in others (such as heavy industries). Type of jobs created by bank credit were seen as:

- Direct jobs created among farmers employed by agribusiness project
- Indirect jobs created by suppliers and distributors
- Induced jobs created when overall economic activity rises

This study marked also that there were lost jobs too, mainly in competitors companies (Gubert, 2011), IFC provided assistance in strengthening a community development program and supply chain linkages, which most likely helped to bring about these strong results. From the industry sector aspect, such as tourism, only accounting for the direct effects of projects misses their potentially high development impact, including the impact on job creation. A large part of economy-wide job creation associated with investment in hotels happens through indirect job creation in hotels’ suppliers and contractors, job creation due to spending by hotel guests outside the hotel, and hotels attracting business into the area.

EBRD has provided an study on the retail sector in Poland, Bulgaria, and Romania. Main findings on potential job creation were situated in modern retailers and significant job losses in competitors. The study has been provided in 2011.

The FAO study from the United States founded that for every hundred jobs added by introducing modern retail stores, fifty were lost in competing enterprises over the next five years, indicating just half of them as direct job created.

The goal of these studies was to assess the socio-economic impact of IFC’s, EBRD’s financing in these countries. Employment associated with their investments has been one of the parameters evaluated.

Some other evaluations which were reviewed in the Access to Finance area in Bosnia and Herzegovina, Bangladesh, China, Ghana, India, Maldives, Mexico, Mongolia, Morocco, Sri Lanka, and Vietnam, were focused on the provision of loans and adding advisory services to micro, small, and medium enterprises as well as to the households. Main findings show that improving access to finance can help firms expand their operations, which can have further positive effect on the quality and number of jobs created and positive effect on employment generation.
Through quantitative approaches, can be concluded that improving access to finance for micro-enterprises can create jobs both through the establishment of new businesses and through the expansion of already existing ones, what is more evident in rural settings.

Also, investments in the services sector in urban areas and in agriculture in rural areas tend to create the most jobs, in which collective loans are likely to have stronger effects on employment.

**Literature Review**

**Definitions and Relevant Multipliers**

When development finance institutions, policymakers, and business leaders are estimating the job-creation effects of their activities, they must look beyond direct jobs generated. They also should consider:

— indirect jobs,
— induced jobs,
— second-order “growth” effects, and
— net job creation. If an analysis fails to consider indirect jobs created in suppliers and distributors, it likely will underestimate the poverty-reduction effects.

The literature treating the employment effects of credit loans mostly consider further definitions:

— Indirect employment effect is defined as a change in employment in a client’s supply and distribution chain, where the multiplier can be define through a number of jobs created in the economy for each direct job through further formula for Type I:

\[
\frac{\text{# Direct Jobs} + \text{# Indirect Jobs}}{\text{# Direct Jobs}}
\]

— Induced employment effect is defined as a change in employment resulting from increased demand associated with extra labor income generated by new jobs, where the multiplier can be define through a number of jobs created in the economy for each direct job through further formula for Type II:

\[
\frac{\text{#DirectJobs}+\text{#IndirectJobs}+\Delta\text{InducedJobs}}{\text{# Direct Jobs}}
\]

— Net job creation: effects accounting for job losses in competitors.

Secondary effects refer to job creation through benefits of improved access to infrastructure, such as access to more reliable power allowing enterprises to produce more, and more efficiently.

Value added refers to wages/salaries plus corporate profits plus taxes.

Multipliers represent a snapshot of an economy at a particular point in time. Multipliers, such as the total number of jobs in an economy generated per one direct job, are frequently used to assess and benchmark the job-creation effects of private sector activities. However, they are highly context specific, rarely based on a counter factual, and vary across industries, within industries across countries, and even within one industry in
the same country. Depending on country, industry, and client characteristics, a range of multipliers should be used, and different methods for their derivation may need to be applied. Here are not included some also important background information and their impact as the pattern of employment growth dependences on the age of companies in the sector, changes in its capital intensity.

**Theories overview**

The paper is based on literature concerning the credit creation theory of banking, the fractional reserve theory and the financial intermediation theory.

The bank newly ‘invented’ the funds by crediting the borrower’s account with a deposit, although no such deposit had taken place – what is in line with the claims of the credit creation theory. According to Fama (1985), banks are different in solving the longstanding puzzle and different from both non-bank financial institutions and corporations. They can individually create money out of nothing. Hahn (1920; 1954; 1963), Halm, (1963), Hesse (2007), Keynes’s works in the several editions of *The Economic Theory of Bank Credit* (Ibid: 224). Bortkiewicz (1921; 1915) Böhm-Bawerk, (1985), on capital theory gave up the basic principle of his business cycle- and employment theory. Among the few economists who recognized the lasting importance of Hahn’s *Economic Theory of Bank Credit* for a modern credit theory and monetary theory of business cycles are: Fritz Neumark (1900-91), an “enlightened” Keynesian, and Friedrich Lutz (1959), an “enlightened” monetarist and liberal economist. Lutz made major contributions to the theories of interest, investment, and currency problems. Hahn is in a line with Wicksell (1898), and Schumpeter (1934; 1939), and Keynes (1930; 1936) in emphasizing the importance of credit for a modern economy, (Gubert, Roubaud,2011).

What are the theories behind financial intermediation, banks are playing a dominant role in job creation, economic growth, and managing financial and economic stability of a country. Very often researchers use basic theories on economics (i.e., supply and demand for loanable funds) to explain financial intermediation and microfinance institutions (Grozdanic et al., 2014).

**Qualatative Research**

**Hypotheses and Methodology**

During 2014, Micro finance institution which is the subject of the research presented, approved loans that have helped sustain and create number jobs in Serbia. So the main hypothesis of the research that: Bank loans have positive impact on job creation has been qualitative checked (Grozdanic et al., 2006).

In the research haveleneen measured the data on working posts, focusing on two main indicators: sustained and created jobs, measured at the level of MFI clients from all segments, agro, business and population. Data used were:

- In business sector: number of employed, registred and non registred at the start date of the research; number counted as number of sustained jobs;
- number of the planned new employees by the client of the MFI after provided loan; number counted as new created jobs;
— In agro sector: number family members over 15; number c as number of sustained jobs;
— number of day laborers or seasonal workers which client usually employs over the year; number counted as new created jobs.
— In the sector of population: only loans with the purpose of the added revenue for the household from business or agro activity: includes number of people going to be employed on added activity from the household and external human resources; number is counted as new created jobs;
— If the client apply for new loan the data are created the same as above.

**Key Research Findings**

In summary results during 2014, MFI has approved loans that have helped sustain 28,720 and create 13,658 jobs in Serbia. Dynamics of the total number of jobs that are sustained and created in such way, observed by months, can be interpreted as a time series shown in Figure 1. As expected, the months with the highest numbers of created and sustained jobs were during March, April, October and November of 2014. These are, as an usually, the months of the highest credit activity. According this, it can be easily notice a typical seasonal dynamics of the number of retained and created jobs. Such dynamics can also be quantitatively expressed, as was shown in Figure 1, where the both of time series approximated by the polynomial trend of 6th degree.

![Figure 1: Job impact made by OBS loans disbursed during 2014](image)

*Source: Research results*
Clearly, a high degree of agreement between empirical and fitted values can notice, which can also be expressed quantitatively. For this purpose, as a typical fitting measure, it can be used a well-known Coefficient of determination ($R^2$), which represents the relative measure of fitting the trend-line with the empirical data. Therefore, this coefficient represents the level of the explained variability in corresponding theoretical model. In the case of the time series observed above, the estimated value of the coefficients of determination are equal $R^2 = 0.9309$ (Sustained-series) and $R^2 = .08828$ (Created-series), respectively. This means that $93.09\%$ of contribution towards in the prediction of sustained jobs dynamics can be explained according the appropriate trend-line. Similarly, the fitted trend-values can explain $88.28\%$ of contribution towards in the prediction of created jobs dynamics.

Nevertheless, due to the mathematical complexity of this kind of quantitative analysis of the impact of the season, we will use some typical statistical indicators. First of all, in order to more detailed statistical analysis of dynamics of both series, denoted as “Sustained” and “Created”, respectively, their typically descriptive statistics are shown in Table 1.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
Statistics & Sustained & Created \\
\hline
Min & 1,310 & 653 \\
1\textsuperscript{st} Quartile & 2,110 & 854 \\
Median & 2,318 & 1,129 \\
Average & 2,393 & 1,138 \\
3\textsuperscript{rd} Quartile & 2,821 & 1,459 \\
Max & 3,171 & 1,547 \\
Total & 28,720 & 13,658 \\
Stand. Deviation & 499.07 & 331.44 \\
Coeff. of Variation & \textbf{20.85\%} & \textbf{29.12\%} \\
\hline
\end{tabular}
\caption{Summary statistics of observed data series.}
\end{table}

\textbf{Source: Research results}

It can be seen, for instance, that minimum value of “Sustained”-series equals 1,310, and it corresponds to the smallest number of retained jobs, were realized in January. On the other hand, the maxima of the sustained jobs, realized in April, equal 3,171. The average of the number of retained jobs is equal (approximately) 2,393, with a total variability of 20.85\%. When considered the second, “Created”-series, we have the following conclusions. The minimum of created jobs are realized in Jun, 653 of them only. Conversely, in February the most jobs were created: 1,547. The average of created jobs equals 1,138, as the total variability, expressed as a coefficient of variation, equals 20.85\%.

In the following segment of our research, we detailed analyzed the seasonal components of both of observed time series. For this purpose, we used the so-called Specific Seasonal Indexes, which are calculated by formula $I_5 = \left(\frac{y}{\bar{y}}\right)$. Here, $y$ represents the original empirical values of observed series, while $\bar{y}$ their average value.

In this way, seasonal index $I_5$ expresses (in percent) the seasonal impact on the time series dynamics in each time level (i.e. the month, in our case). After that, for both time series were constructed the appropriate functions of a linear trend ($y = bx + c$). As it is well-known, trend-values represent the component of stability of time series, i.e. their expected values if there would be no seasonal (or any other) impact. Finally, using a multiplicative model of the dynamics of time series, we can extrapolate (i.e. make a
forecasting) the dynamics of a time series in the future, according to the formula $\hat{y}_S$. Note that this expression included, at the same time, a seasonal and trend components, and thus it is possible to predict the "future" dynamic of time series.

**Table 2: Construction of seasonally indexes and forecasting values.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Sustained</th>
<th>Created</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$y_{2014}$</td>
<td>$I_S$</td>
</tr>
<tr>
<td>Jan</td>
<td>1,310</td>
<td>55%</td>
</tr>
<tr>
<td>Feb</td>
<td>2,177</td>
<td>91%</td>
</tr>
<tr>
<td>Mar</td>
<td>2,871</td>
<td>120%</td>
</tr>
<tr>
<td>Apr</td>
<td>3,171</td>
<td>132%</td>
</tr>
<tr>
<td>May</td>
<td>2,459</td>
<td>103%</td>
</tr>
<tr>
<td>Jun</td>
<td>2,122</td>
<td>89%</td>
</tr>
<tr>
<td>Jul</td>
<td>2,004</td>
<td>84%</td>
</tr>
<tr>
<td>Aug</td>
<td>2,121</td>
<td>89%</td>
</tr>
<tr>
<td>Sep</td>
<td>2,078</td>
<td>87%</td>
</tr>
<tr>
<td>Oct</td>
<td>2,925</td>
<td>122%</td>
</tr>
<tr>
<td>Nov</td>
<td>2,804</td>
<td>117%</td>
</tr>
<tr>
<td>Dec</td>
<td>2,678</td>
<td>112%</td>
</tr>
</tbody>
</table>

**Source: Research results**

In Table 2, for both series, the above-mentioned procedure of constructing the seasonal indexes, as the extrapolation based on them is shown. The second and fourth column of the Table shows the values of the observed series, while the third and fifth columns show the values of the seasonal indexes. Note that in the period Jan-May, as well as in the last quarter of 2014 there is much pronounced seasonal impact (the values $I_S > 100$).

On the other hand, convincingly smallest value of seasonal index corresponding to January. At last, fourth and the last, seventh columns show the extrapolated values of the sustained and created jobs in 2015. Note that in the case of Sustained-series, a growing trend is obtained. Therefore, we can expect an increase of values of this series in the next year, i.e. we predict an increase the number of jobs retained by OBS loans. On the other hand, in Created-series there has been a slight declining linear trend. Thus, in the coming year can be expected, unfortunately, some reduction of the number of created jobs.

The both trends line, together with the observed, empirical values (solid lines), as well as predicted values (dashed line) are shown graphically in Fig. 2.
Discussion and Conclusions

It would be observed that, despite the presumed developments in the Serbian economy, the country is still largely being regarded as a one in transition, as the industrial growth is not quite impressive with the high unemployment as a main problem.

Because of that the researching this paper is essentially significant as it is directed towards evaluating the impact and role that micro finance banks loans have on the creation of jobs and employment thus stimulating economic growth and development of Serbia, especially the rural area.

Commercial banks lend traditionally to medium and large enterprises which are judged to be credit-worthy, avoiding doing business with the poor and other micro enterprises and households because the associated cost and risks are considered to be relatively high. As rural areas and self-employment are recognized in Serbia important for sustainable growth and development, what microfinance banks do- with their micro loans – the financial empowerment of these areas, their role can be considered as vital too.

Even more, the new growth strategy of SMEs of Serbia is just to be adapting, with the latent entrepreneurial capabilities of the large segment of the people to be stimulated and sustained, then positive multipliers would be felt through the Serbian economy (Grozdanic et al., 2013).

To give effect to these aspirations various policies have to be instituted over future time by the Government to improve rural enterprise and households production capabilities, in which such research results can be of use and contribute the more positive climate.

Figure 2: The original and predicted values of the numbers of sustained and created jobs

Source: Research results
References


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