



Individual Advanced Research Opportunities Program

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Financial Development and Economics Growth in Bulgaria

Topic of research:

Bulgaria experienced a dramatic increase in credit market activity in the last few years. According to data from the Bulgarian National Bank (BNB) bank credit to private non-financial enterprises increased by about 260 percent from 1999 to 2005. In some sectors of the economy the credit growth was even faster. For example, the credit to firms in the construction industry increased 14 times during that period!

Although the speed of the increase in credit raised some concerns related to the large current account deficit, the credit growth is perceived as a positive change from the early years of transition from communism when the private sector experienced a severe shortage of financing. Indeed, the claim that credit has a positive effect on the economy seems obvious because now firms can expand and improve their operations using external financing. Similarly, households can obtain credit and increase their consumption stimulating the economy. The short-term positive impact of buoyant credit markets on income is not in doubt.

The question, however, is whether the credit growth of the last few years will have a similarly positive effect on long-run economic growth. As we know well from the theoretical and empirical literature, it is productivity growth and not factor accumulation that drives long-term growth. Along these lines, Levine (2004) discusses five main functions that the financial system has to perform in order to have a positive effect on long-term growth: 1) Produce information ex ante

about possible investments and allocate capital; 2) Monitor investments and exert corporate governance after providing finance; 3) Facilitate the trading, diversification, and management of risk; 4) Mobilize and pool savings; and 5) Ease the exchange of goods and services. Unless these functions are performed well by the financial system, the effect of the credit growth will be limited to a short-term stimulus. In fact, the development of a financial system can be defined as the degree to which it performs these functions well. Therefore, an increase in credit activity is a necessary but not a sufficient condition for the financial system to exert a positive effect on growth.

Unfortunately, it is difficult to measure empirically how well a financial system performs the functions using available data. One option is to look at the percent non-performing credits but usually this measure reveals problems too late when a crisis is imminent. For lack of better proxies, most of the empirical literature on finance and growth has used credit aggregates to proxy for the degree of development of the financial system.

This project is an attempt to determine how well the banking system performs the functions summarized by Levine by interviewing a large spectrum of bank and government officials in Bulgaria during the course of several months. The interviews with officials revealed interesting information about the particular mechanics, as well as the strengths and weaknesses, of fulfilling the banking system functions summarized by Levine. Some of the insights revealed by the interviews are general, some are specific to the transition countries, and some are specific to Bulgaria.

In addition to conducting interviews, this project collected and analyzed a rich data set of credit activity and the performance of the real economy to determine empirically the relationship between credit, on one hand, and economic growth and investment on the other. The qualitative and the quantitative parts of the project are intertwined and complement each other.

Relevance and contribution to field:

The quantitative analysis of the project makes several contributions to the academic literature on finance and growth. First, the project tests empirically the effect of credit on investment and growth by economic sector. In contrast, most of the literature has studied the effect of financial development on GDP growth or aggregate investment activity. Hence, we don't know if credit has a stronger or weaker effect on, for example, the manufacturing sector compared to the agriculture and service sectors. The results from Bulgaria provide such information. Second, the empirical tests examine the effect of credit maturity. According to theory, one of the important functions of the banking system is to transform the short-term liquid bank deposits into long-term credits which finance long-term investment projects. This is important for the economy because long gestations projects contribute to raising the productivity of the economy. However, the literature has not provided an analysis of credit maturity and its effects on the economy. Third, the empirical analysis investigates the effect of credit size. In addition to providing long-term financing, another important function of the banking system is to transform the small-size deposits of individual savers into larger credits that fund large investment project. Such projects have a strong positive effect on the economy because they exploit economies of scale. However, similar to credit maturity, the literature has not investigated the effect of credit size as we do using the data from Bulgaria.

The qualitative part of the project does not have a counterparts in the literature which is either theoretical or it employs econometric analysis. The literature does not offer much institutional

detail on the performance of the financial systems outside the US and a few other developed economies. The interviews from this project make such information available.

A concise summary of your approach and research methodology:

The statistical data set used in the quantitative part of the project is on credit to various sectors of the economy and the economic outcomes in these sectors such as output growth, investment, and employment. The objective of the statistical analysis is to determine 1) the trends of the provision of credit during the last several years after major financial reforms; 2) whether credit growth enhances economic development in Bulgaria; 3) what types of credit are more important; and 4) what sectors benefit the most. The time series that were used have 30 quarterly observations starting in March 1999 and ending in June 2006. The data capture the period of rapid credit expansion since 2001. Thus, the analysis extends Miller and Petranov (2001) who use data until 2000 when credit markets were still very inactive. The data cover 10 economic sectors: agriculture, mining, manufacturing, utilities, construction, trade, tourism, transportation, financial services, and health care. The data have 30 observations by sector * 10 sectors = 300 observations in total and were obtained from the quarterly financial system reports published by the Bulgarian National Bank. The data were used to estimate a series of panel data models that explain economic growth, investment, and employment growth by sector using credit by sector, the maturity of credit, and credit size.

To gain insight into the mechanics of the credit process and to investigate how banks perform the functions discussed by Levine during the credit boom, I interviewed about 25 officials from the banking system and the government as well as a few analysts in academia and the NGO's. The interviewees included bank officials from a wide variety of banks in the capital Sofia and outside Sofia. Some interviewees were from small banks that do not have a large branch network and specialize in particular financing while other interviewees were employed by the largest banks in Bulgaria. The sample of interviewees also ranged across positions within the banking system. I interviewed credit inspectors for small and micro enterprises at bank branches as well as branch managers, and chief economists at some banks. Some interviewees specialized in corporate credits while others had significant experience in the largely dormant but developing credit market for agriculture activities. Many of the bank officials have had working experience at other banks since the turnover in the banking system is very high and many have had experience in several positions, e.g. micro credits, corporate credits, mortgages, research and even board of directors. The richness of this sample proved extremely helpful as it allowed me to discuss the insights of people with varied experience and viewpoints. The interviews usually took about 1 hour during office hours or after work.

A summary of your research findings and preliminary conclusions:

Quantitative Empirical Results Using Credit Aggregates across Economic Sectors

Credit in Bulgaria has been expanding rapidly, by about 24 percent per year, in the last several years. The growth of credit has been especially strong in the service sectors and in the construction and real estate sectors. The aggregate credit to the service sectors has become larger than the credit to the manufacturing sector. Credit to the agriculture sector is a small fraction of the credit portfolio of the banking system.

The expansion of credit has had a positive and statistically significant effect on investment and economic growth. For every 1000 leva (the national currency) borrowed, investment increases by about 200 leva. For every 10 percentage point increase in the ratio of credit to GDP annual economic growth increases by about 0.3 percentage points. These effects are particularly strong in the manufacturing sector and the transportation sector.

Credit maturity has become longer over the years. In 1999, short-term credit with maturity of one year or less was about 74 percent of total credit. By June 2006, short-term credit had decreased to about 31 percent.

The growth in credit activity in Bulgaria during the last several years has come primarily from the growth of the number of loans extended rather than from the growth in the sizes of loans. Credits in the smallest size category, up to 5000 leva, have experienced the fastest growth in numbers. Thus, the average size of credits in Bulgaria has decreased over time.

The maturity and size composition of credits influences the effect of credit on investment. Long term credits and larger size credits have a particularly strong positive effect of investment, especially in the manufacturing sector.

Quantitative Results from Interviews with Bank Officials

Assessing risk and allocating capital

Having a relatively long (2-3 years or more) history with a bank is an important determinant of whether that bank will extend credit to a borrower. This is true particularly at the branch level from where banks channel financing to micro, small, and medium size firms.

The evaluation of borrowers in Bulgaria is hampered to some extent by the widespread tax evasion. Yet, many banks have found ways to incorporate information from firms' unofficial records into their decision making process. The extension of credit to a firm that officially reports negative or small profits is justified by preparing a favorable "economic potential" valuation for the borrower.

The banking sector does not provide a strong incentive for the reduction of tax evasion in the country. Instead of the firms adjusting to the practices in the banking system, many banks are adjusting their practices to the conditions in the real economy.

A major difficulty in the credit evaluation process is that potential borrowers have little or no experience in the projects for which they need funding. A typical example is someone who owns a wholesale store for food products and requests funds to build a condo building in one of the resorts in Bulgaria.

Every level in the banking system faces limits in terms of the maximum size of a credit they are allowed to extend. These limits may differ across the various branches of the same bank depending on the location of the bank branch and the experience of the branch officials. The size limitations were introduced in many banks after the 1997 crisis. Before the crisis, branch managers had discretion with large credits which lead to corruption and the misallocation of resources.

A common theme that emerged in the interviews is that after 15 years of transition many credit inspectors know the firms in their towns. Therefore, evaluating the individual borrower is not the

main problem. Many credit inspectors complained that obtaining information about the economic sector in which the borrower operates is more problematic. These difficulties are due partly to the lack of timely and comprehensive data that can be used to analyze sectoral and regional dynamics and partly to the rapidly changing economic structure of Bulgaria's economy.

Despite the information challenges, overall banks seem to make prudent decisions when it comes to firm credits. The culture in the banks is different from that before 1997 – by and large banking officials operate with the attitude that lending decisions are made on the basis of prudent credit evaluation and not on the basis of connections and corruption. The influx of foreign banks has contributed significantly to this change.

Monitoring Borrowers

Banks have procedures in place for monitoring the use of funds after the extension of credit. The procedure includes periodic inspections of financial documents as well as site inspections. Often, credit instruments are structured so that stages of financing are released only after the borrower presents proof of the effective use of funds thus far.

When a firm experiences difficulties servicing its credit, banks request significant amounts of information about the business and start spending time with the management on the premises of the firm. The collection and analysis of information can take months. Eventually, the loan may be restructured usually extending its maturity. The bank also encourages the borrower to secure funding from other sources. If agreement cannot be reached, then the bank proceeds to selling the collateral. However, this is done only as a last resort.

The monitoring of the use of funds is hampered to some extent by the rapid growth of turnover and overdraft credits. Unlike investment credits which are extended for a particular purpose, e.g. for the purchase of office space or machinery, the overdraft and turnover credits are extended on the basis of evidence for the sales of the firm and its current financial situation. The concern is that the banking system is extending too many overdraft and turnover credits which are used for investment purposes at the discretion of the borrower without prior approval by the bank.

A similar problem exists with household credits which are also used to fund business investments without prior justification of the investment before the bank.

Ameliorating Cross Sectional Risk and Liquidity Risk; Credit Maturity

Many of the interviewees attributed the 1996 banking crisis in Bulgaria to the lack of diversification of the banking system. Many banks had significant exposure to one economic sector and often to one firm. The legacy of the crisis, the Basel capital adequacy standards, and the better portfolio allocation practices that have become the norm in the banking system contribute to greater attention paid to cross sectional diversification.

Banks prefer to extend short-term credits in order to reduce the maturity mismatch on their balance sheets. Often the bankers brought up their experiences during the 1996-1997 banking crisis when demand deposits and short-term time deposits fled the banking system and the banks were left holding long-term illiquid assets.

At present the maturity of investment credits has a maximum maturity of about 5-7 years but some banks already offer 10 year maturity. The prevalent view in the banking industry is that

competition between banks will lengthen the maturity of investment credits. If some banks offer loans with long maturity, other banks will be compelled to do the same.

Pooling of Savings; The Sizes of Credits

Bank officials agreed that most credits in Bulgaria are small in size but emphasized that the statistical data on credit size must be considered with caution since one borrower might have several credits.

There were several reasons brought forth to explain the small credit sizes. First, lending to a greater number of borrowers increases the diversification of the credit portfolio. Second, most banks in Bulgaria are relatively small in size and make small credits. Third, the size of the overwhelming majority of firms in Bulgaria is small. These firms apply for and are approved for small loans. The increasing access of small and medium sized firms to the financial market leads to a reduction in the average size of loans.

Nonetheless, larger Bulgarian firms do have access to large credits. However, these credits are generated by banks outside Bulgaria.

There are two major deterrents to participating in the official financial system. One is the low income level of many Bulgarians which leaves little or no savings. The second reason is tax evasion. Banks are required to submit information about large bank transactions to the BNB. Therefore, savers with illegitimate savings prefer alternative assets, mostly real estate. There also appears to be a thriving unofficial lending market which operates with these funds.

Aggressiveness vs. prudence

All credit inspectors in the banking system walk a fine line between trying to extend credits that are well justified and extending as many credits as possible. The banks in Bulgaria are in strong competition for market share, which translates into incentive schemes motivating bank officials to generate credits. It is common to base bank officials' pay partly on the size of their credit portfolio and its rate of growth (adjusted with some measure of credit quality such as the percent delayed payments).

Issues of trust

Although trust in the banking system seems strong, there are some curiosities. For example, several bankers complained that business owners who request credit are reluctant to provide information about their business. They are concerned that the banks will pass this information to their competitors or that the bank inspector him/herself will take advantage of the project idea. Also, business owners are reluctant to approach consulting companies that specialize in the preparation of business plans for fear that the consultants will take advantage of the information about their business.

Suggestions for future research.

A common theme that emerged in most interviews is that the level of financial literacy of the Bulgarian population is low. Many business owners do not understand well the services and credit packages provided by banks. Individuals in general have weak knowledge of the various assets offered by the financial system. For example, Bulgaria has the lowest percent of

household savings invested in the stock market compared to other European countries. Future research should investigate the level of financial literacy in the country and its determinants.

Future research should also compute more comprehensive measures of the credit aggregates. Figuring out the volume of credit to non-financial firms is not as straightforward as one would anticipate. There are a few adjustments that need to be made. First, one must include the loans from banks outside Bulgaria to firms in Bulgaria. Large firms access international capital markets to obtain large size funds. Second, the measure of credit must include credit from non-bank finance companies. For example, leasing companies are becoming increasingly important for funding the acquisition of various equipment and machinery. The leasing companies specialize in extending long-term credits using the equipment as collateral. Third, one must add the domestic and the international bond markets. Fourth, although this would be impossible to measure, one must at least acknowledge that part of the household credit is used for business purposes and also that a number of small firms access the unofficial credit market.

Recommendations for the US policy community.

Bulgaria remains a dependable ally of the United States and a reliable partner in the war on terrorism. Being a NATO and EU member, it has the potential to continue to be a stable political and economic anchor in the Balkan region. Hence, Bulgaria's stability and prosperity is an important foreign policy goal. Furthermore, the financial sector is an important factor for achieving that goal. Rapidly growing financial markets can bring much needed external financing to firms, which spurs economic growth but they can also be volatile. Only timely and careful research can determine whether the benefits from the rapid development in the financial system outweigh the risks. Hence, research on these issues should be encouraged by providing funding. U.S. institutions should also maintain their pressure on Bulgarian authorities to continue market reforms and to not become complacent in their reform efforts in the financial system and in general.

References

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