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## TOWARDS SUSTAINABLE DEVELOPMENT VIA ENHANCING VIABILITY OF SMALL BUSINESSES THROUGH LENDING: A CASE STUDY

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Absrtract. Sustainable development of any country is hardly possible without viable small business. The development of small businesses has a number of advantages, which are expressed in the activation of structural adjustment of the economy, providing freedom of market choice and additional jobs, ensuring rapid cost recovery, and rapid response to changes in consumer demand. Small business leads to saturation of the market with goods and services, overcoming industry and territorial monopolies, and increasing the level of competition. In Kazakhstan, state support for small and medium-sized businesses is multi-level in the implementation of measures to reduce the tax burden, implement a set of measures to facilitate access to credit resources, simplify administrative procedures and permits, and organize regional centers to support small and medium-sized businesses in cities and rural areas.

**Keywords:** sustainable development; small business; lending; tools; sources; funds; programs; manufacturers; credit product; financing; services; indicators

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#### 1. Introduction

There is unanimous agreement among development scientists, that sustainable development of any economy is closely related to viability of small business (e.g. Filipishyna et al., 2018; Baltgailis, 2019; Tvaronavičienė, 2017; Kowo et al., 2019; Amraoui et al, 2019). At the new stage of development, Kazakhstan is solving a wide range of tasks related to improving the competitiveness of the national economy. These are, first of all, economic restructuring, development of infrastructure and market institutions, as well as overcoming the shortcomings inherited from the previous stage: imperfection of the industry and technological structure; weak internal integration, and insufficient viability of productive forces (e.g. Petrenko et al., 2019; Tireuov et al., 2018).

Foreign experience of economic and social development confirms that small business can become a real factor not only for stabilization, but also for growth of the economy of Kazakhstan. Small business contributes to maintaining a proper level of competition, flexible restructuring of production, acceleration of innovation processes, formation of social orientation of market relations and employment growth. In this regard, the scientific analysis of the economic problems of small businesses in Kazakhstan is of particular importance in the conditions of economic reform, characterized primarily by the structural restructuring of the economy, the

need to stabilize reproduction processes and ensure sustainable economic development in the future (Tireuov, 2016a). Today, the problems of optimizing state and non-state influence on the small business sector, the lack of an integrated business management system at the level of the state and its regions, and a specific enterprise, are of particular relevance.

The state needs a number of studies on both the theoretical aspects of business, the definition of small and medium-sized businesses, and the study of practical issues of creating and effectively operating small firms, which were resilient to external challenges (Tvaronavičienė, 2018). The role of small and medium-sized businesses in the modern economy is difficult to overestimate. In developed countries, small and medium-sized businesses account for about 55-60% of enterprises and produce about half of the gross domestic product.

#### 2. Methods of research

As it was already indicated above, small and medium-sized businesses are now the core of sustainable economic and political development. The development of small business has a number of advantages in comparison with large-scale production, which are expressed in the activation of structural adjustment of the economy, providing broad freedom of market choice and additional jobs, ensuring rapid cost recovery, and rapid response to changes in consumer demand.

Small business contributes to the saturation of the market with goods and services, overcoming industry and territorial monopolies, and increasing the level of competition (Tireuov, 2016b). In General, it can be noted that state support for small and medium-sized businesses in the Republic is multi-level: measures are being taken to reduce the tax burden, legalize property and assets, implement a set of measures to facilitate access to credit resources, simplify administrative procedures and permits, and organize regional support centers for small and medium-sized businesses in both cities and rural areas.

Currently, the state actively supports the constructive initiatives of public organizations of entrepreneurs. The society promotes the active life position of each entrepreneur in creating an economically developed state and improving the welfare of the population of the Republic.

#### 3. The discussion of the results

Small business enterprises are an essential component and subjective base of a civilized market economy, an integral element of the competitive mechanism in the market. The entrepreneurial structure gives the market economy flexibility and carries antitrust potential (Altukhov, 2016). The development of small businesses solves the problem of employment and other social problems of the market economy, as well as provides a breakthrough in a number of areas of scientific and technological progress (Tvaronavičienė, 2018). For these reasons, the formation, maintenance and development of small businesses is currently part of the strategic objectives of the economic policy of the Republic of Kazakhstan.

The development of small and medium-sized businesses is the basis of any country's economy. Without developed small and medium-sized businesses, it is difficult to talk about the stability of the macroeconomic situation of States. As a result, even at the dawn of independence, small and medium-sized businesses were identified in Kazakhstan as the most important sector of the economy.

Comprehensive support for small and medium-sized businesses has always been a priority of state policy. This is why, despite the difficult economic situation in the country in the 1990s, the number of small businesses has constantly grown. The formation and formation of small businesses in Kazakhstan took place in 4 stages: 1. Small business shortly before independence (1986-1990); 2. Small business at an early stage of transition to a market economy (1991-1996); 3. Small business at the stage of formation of market relations in Kazakhstan (1997-2000); 4. Modern stage of small business development. The first three stages are associated with Kazakhstan's independence, the establishment of market relations and the emergence of new forms of ownership in the country.

During these stages, there was a gradual formation of the regulatory, legislative and institutional framework for supporting the development of private entrepreneurship. The current stage of development of small and medium-sized businesses in Kazakhstan, for example, is characterized by the introduction of a number of complex measures aimed at streamlining activities in the field of private entrepreneurship, including small businesses (Gumar, 2018).

In the socio-economic policy of the Republic of Kazakhstan, special attention is paid to the development of small businesses. Its role in improving the social climate is leading. First of all, employment is growing faster in this area and conditions are being created for stability in society.

In the modern world economy, the further development of the power of large monopolies is accompanied by the preservation and development of small and medium-sized firms, which is due to the scientific and technical revolution

The share of small businesses in developed countries such as the United States, Germany, and Japan is very large, ranging from 97-99%, employing 50-70% of the country's working population and creating up to 55% of the country's gross domestic product (GDP). Similar parameters for the Republic of Kazakhstan differ from these results, since the share of small and medium-sized businesses in the country's GDP is about 27 %, the share of employees in the total number of employees is 37.4 % (Makarova, 2019; Farooq, 2019).

Availablibility of funding is very important factor directly affecting vialbility of small and medium companies (Włodarczyk et al., 2018; Włodarczyk et al., 2018; Mackevičius et al., 2018). In the United States, credit is provided through the small business Administration, the small business insurance credit Corporation (Japan), and credit for medium and small firms (France). Special attention should be paid to the American experience of state support for small and medium-sized businesses. The United States is a country of not only giant corporations, but also small businesses that employ more than 50% of private sector employees. The small business administration (SBA) provides loan guarantees to small and medium-sized businesses (Ivanova, 2018; Bychkov, 2019).

In addition, it offers a wide range of financing methods - from microloans to loans to cover large debt (Gritsenko, 2019; Kiryan, 2017). Small business development centers provide many types of services related to specific projects in various fields (from home business to shipping and international trade), as well as technical assistance, management assistance, and loan applications.

In modern conditions, the mechanism for ensuring effective functioning of small and medium-sized businesses should be concentrated, first of all, to strengthening state support for small and medium-sized businesses (Gumar, 2018). In order to assist in the development and creation of favorable conditions for business in the Republic of Kazakhstan, state, government and industry programs have been functioning at various times (figure 1).

In order to further develop small and medium-sized businesses, government agencies have identified the main areas of support for small businesses in the near future, including the formation of an entrepreneurial climate, a competitive environment, and a system of public institutions that will encourage the private sector to create industries with high added value.



Figure 1. State, government and industry business development programs

The government is pursuing an in-depth policy on financial sector reform and comprehensive development of small business support infrastructure: expanding the network of small and medium-sized business centers, business incubators, consulting, leasing and other firms, and creating data banks that specialize in servicing small businesses (Mizanbekova et al., 2016). It also provides for measures for cooperation of small businesses with large enterprises, as well as the implementation of segmentation of large inefficient industries and the creation of small enterprises on their basis. In order to attract entrepreneurs to the process of preparing legislative and regulatory acts, the Central Executive bodies have established Expert councils for the support and development of small and medium-sized businesses, which include representatives of public associations of entrepreneurs.

In general, the procedure for registering small businesses has now been simplified - introduced the model statutes, the registration fee is reduced by 4 times, a simplified procedure of certification of products for small businesses, introduced incentives for real estate registration and land rights, reduced the number of Supervisory and inspection state bodies and paid services carried out by them, held tenders for the transfer of small businesses engaged in production activities, unused spaces and land, as well as unfinished construction sites, a simplified accounting system has been introduced for small businesses.

The government of the Republic of Kazakhstan sets an ambitious goal-to increase the share of small and medium-sized businesses in the gross domestic product to 50% by 2050, currently the figure exceeds 28 %

By June 2019, more than 438 thousand legal entities and 1.16 million individual entrepreneurs were registered in Kazakhstan. One of the tools for achieving this goal is lending, which the authorities are trying to make more accessible to businesses through various government programs, such as the business Roadmap 2020 program, Damu regions III, and the Enbek program for the development of productive employment and mass entrepreneurship. Within the framework of the priority project lending mechanism, entrepreneurs engaged in the manufacturing industry and the agro-industrial sector can receive funding (Palatkin et al., 2018; Noeva et al., 2019). This is a new state program aimed at developing the production of so-called simple things in Kazakhstan, and the production of a product or service from the list of priority projects is a prerequisite. An entrepreneur can get a preferential rate at the expense of state subsidies. Loans are issued for investments and working capital replenishment.

The "Business Roadmap 2020" program is the main program to promote the development of entrepreneurship in Kazakhstan and support it using public Finance and tools. It sets out, among others, target indicators for the development of small and medium-sized enterprises (SMEs). Thus, it is planned to increase the volume of

output of SMEs by 1.5 times from the level of 2014, increase active SMEs by 50 percent and the number of employees in SMEs by 50 percent from the level of 2014. The Fund for financial support of agriculture issued 50 billion tenge to Kazakh farmers in 2018. The main credit products are the programs "Igilik", "Sybaga", "Kasipker" and "Yrys". The Fund credits rural entrepreneurs and those who are just getting ready to start a business under the program for the development of productive employment and mass entrepreneurship. In 2018, 30 billion tenge was allocated for these purposes in the country, of which 1.8 billion tenge was allocated to the North Kazakhstan region. In 2018 year 7.8 thousand rural entrepreneurs in Kazakhstan received micro-loans worth 28.4 billion tenge. The North Kazakhstan region (North Kazakhstan region) accounts for 3.4 billion of the total portfolio of micro-loans. 4.9 thousand rural producers (63% of the total number of all those who received state support) were trained under the "Bastau" project. 361 people were trained in SKO, which is slightly less than half of those who received preferential funding.77% of credit funds were spent on startup projects, 11% - on opening a new business. The implementation of the program for the development of productive employment and mass entrepreneurship allowed providing jobs to 9.2 thousand people in Kazakhstan, including 705 residents of North Kazakhstan region.

In 2017, the program for the development of meat animal husbandry "Sybaga" was updated. The update allowed to increase the loan amount to 70 million tenge, and also increased the loan term - up to 15 years. The interest rate has been reduced to 4% per annum. In 2018, according to the new version of "Sybaga", 15 entrepreneurs received funding in SKO. The total amount of the loan was 530 million tenge. Thanks to the financial agreements reached, 1 thousand head of purebred cows will be delivered to the region in 2019. JSC "NUH KazAgro" started financing Kazakh farmers in the framework of the program for the development of productive employment and mass entrepreneurship for 2017-2021. The program "Enbek", which is a continuation of the program "employment Roadmap 2020", in which the national holding "KazAgro" has been participating since 2013. The program operators are subsidiaries of the holding – JSC "agrarian credit Corporation", JSC "Fund for financial support of agriculture" and JSC "Kazagrogarant".

In 2019, it is planned to Finance the program in the amount of 17.482 billion tenge. Of the 3,420 micro-loans for startup projects, 684 are planned to be issued. In addition, 2,736 micro-loans will be issued to start-up and existing enterprises and projects within the framework of anchor cooperation. Through a subsidiary of the National holding – JSC "Kazagrogarant" – if there is a shortage of collateral, borrowers can obtain guarantees from the budget. At the same time, the amount of guarantees varies, up to 50% of the loan amount is provided for existing businesses, and up to 85% for startups and start – UPS. Over a five-year programme implementation period (2015-2019) the amount allocated to funding provided in the \$ 276 billion tenge, including means of the Republican budget of 154 billion, local budgets – 90 billion tenge of the National Fund – 31.5 billion. The implementation of support programs for SMEs has led to a significant increase in their lending. Currently, second-tier banks have allocated loans totaling more than 1 trillion to participants in government programs using the interest rate subsidy tool. In the amount of about 100 billion tenge, loans were issued under guarantees under state programs for the development of priority industries, primarily the manufacturing industry, which accounted for 34 billion tenge of loans. Small and medium-sized businesses are making a growing contribution to the economy of Kazakhstan – both the volume of output and its share in the country's gross domestic product are growing steadily.

Within the framework of the "Business Roadmap 2020 program", subsidies are provided at an interest rate for the implementation of business projects or guarantees are provided for Bank loans if the entrepreneur's collateral is insufficient. "DKB-2020" has been operating since 2010, and during this time they approved subsidies for almost 15 thousand projects worth more than 2.2 trillion tenge, subsidies amounted to more than 250 billion. For the implementation of "DKB-2020", you can get loans under the "Damu regions III" Program. Entrepreneurs in cities can take credit in priority sectors of the "DKB-2020", for entrepreneurs working in rural districts, mono-and small cities of Kazakhstan-there are no industry restrictions. As part of the "Enbek" program, both beginning and existing entrepreneurs can get a loan. The program does not provide for industry restrictions, there is only a limit on the maximum amount of credit depending on the region. This budget program is designed to develop the market for micro and small businesses and help self-employed people who plan to open

and develop their own businesses. The programs are implemented by attracting budget funds and through The Damu entrepreneurship development Fund, which attracts funds from the budget and international sources, and provides preferential financing to transfer them to business together with Kazakh banks. There is a division into national and regional programs. In the case of the latter, co-financing is partially from the funds of the akimats, which is why they determine priority industries according to the needs of the region (Mizanbekova et al. 2019). For example, for the cities of Nur-Sultan and Almaty, this is the sphere of services, public catering, tourism and trade. For the Turkestan region, this is the manufacturing industry, for the Kyzylorda or Pavlodar regions – rural producers.

For small businesses in agriculture, specialized credit products are defined: loan guarantees, loans for the purchase of special equipment, target programs - "Ken Dala", which Finance spring field and harvest works, for agricultural processing enterprises, subsidizing the interest rate on loans and leasing of technological equipment, for the purchase of farm animals, leasing of agricultural equipment.

Conditions depend on the specific lending program, but the most attractive is the interest rate: it is usually lower than for similar products in the rest of the financial services market. The bonus is the absence of commissions when making such loans in commercial banks. The overall level of innovation activity of enterprises in the East Kazakhstan region in 2017 amounted to 15.1 %. When considering innovation activity by type of enterprise, it can be noted that the innovation activity of small enterprises is only 11.1%, medium-sized enterprises -24.9% and almost 48% (Figure 2).

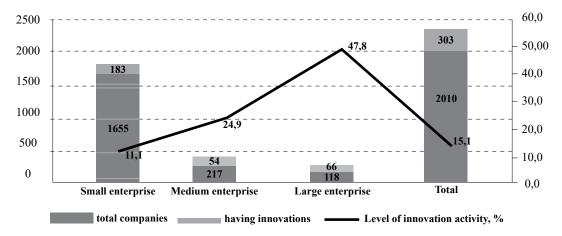


Figure 2. Innovative activity of enterprises

Farmers of Kazakhstan participating in the project for the development of meat farming until 2020 will be provided with loans on preferential terms with a loan term of up to 7 years, and a remuneration rate of 6%. Under the "Enbek" program, you can get loans in the amount of up to 6,500 monthly calculation index (MCI) or 16 million tenge (for all cities except Almaty, Aktau, Atyrau, Shymkent and Nur-Sultan), up to 8,000 MCI or about 20 million tenge (for the cities of Almaty, Aktau, Atyrau, Shymkent and Nur-Sultan), at an interest rate of no more than 6% per annum for up to five years. Under the program to support small and medium-sized businesses in the manufacturing industry, the interest rate also does not exceed 6%, up to 1.85 billion tenge with a maximum loan term of up to 10 years.

The business Roadmap 2020 program includes several areas with their own conditions, subsidizing up to 50% of the nominal interest rate, and the possibility of obtaining a guarantee from the Damu Fund if there is not enough collateral. In 2016, the law "on grain" was amended and, in accordance with these amendments, moved from paper grain receipts to electronic ones. From June 1, 2017 on the portal minagro.kz the rating of grain receiving enterprises is available, which allows market participants to know which company they are operating with, and minimizes the risks of second-tier banks when accepting grain receipts as collateral (Usenbayev et al., 2019). The following changes are made to the system, such as voluntary online insurance of grain receipts, and online lending secured by grain receipts. Electronic grain receipts will be introduced in the future at the level

of the peasant economy, while electronic accounting is conducted at the level of elevators, but in the future it is planned with farms that grain that comes from farms to elevators will be taken into account.

#### **Conclusions**

The development of this small businesssector can create stable conditions for further economic growth and mitigate economic and social difficulties. Small business is a flexible economic structure that quickly adjusts to market changes. The purpose of entrepreneurial activity is to produce and offer the market a product that is in demand and that brings the entrepreneur a profit. The development of technologies, science and technology constantly calls for a qualitative change in demand. This can be done by small businesses due to the flexibility and speed of decision-making. In today's market, the response to rapidly changing demand is much more flexible than that of large enterprises, using lending tools, resources and opportunities.

#### References

Altukhov A. I. (2016). Possible risks and threats to the national food security and independence, APK: Economics, Management, 5, 4-15.

Amraoui, B., Ouhajjou, A., Monni, S., El Amrani El Idrissi, N., Tvaronavičienė, M. (2019). Performance of clusters in Morocco in the shifting economic and industrial reforms. *Insights into Regional Development*, 1(3), 227-243. https://doi.org/10.9770/ird.2019.1.3(4)

Baltgailis, J. (2019). The issues of increasing the effectiveness of teaching comparative economics. *Insights into Regional Development*, 1(3), 190-199. https://doi.org/10.9770/ird.2019.1.3(1)

Bychkov N. A., Metlitsky, V. N., Artyushevsky N. V. (2019). Methodology for assessing the financial condition of agricultural organizations and diagnostics of crisis situations, *Vesci national Academy of Sciences of Belarus. Seryya agrarnykh navuk* https://doi.org/10.29235/1817-7204-2019-57-1-38-50

Farooq, M. O., Elseoud, M. S., Turen, S., Abdulla, M. (2019). Causes of Non-Performing Loans: the experience of the Gulf Cooperation Council countries. *Entrepreneurship and Sustainability Issues*, 6(4), 1955-1974. https://doi.org/10.9770/jesi.2019.6.4(29)

Filipishyna, L., Bessonova, S., Venckeviciute, G. (2018). Integral assessment of developmental stability: cases of Lithuania and Ukraine. *Entrepreneurship and Sustainability Issues*, 6(1), 87-99. http://doi.org/10.9770/jesi.2018.6.1(7)

Gritsenko, G., Vernigor, Minenko, N. (2019). Formation of infrastructure for the development of agricultural entrepreneurship in the region, *Agro-Industrial Complex: Economy, Management*, 2, 32-45.

Gumar, N. A. (2018). On the effectiveness of the credit system of pre-entrepreneurship. *International Journal of Innovative Technologies in Economy*, 5(17), 41-46.

Ivanova, S., Latyshov, A. (2018). Sustainable entrepreneurship: agricultural policy in South Korea. *Entrepreneurship and Sustainability Issues*, 5(4), 748-760. https://doi.org/10.9770/jesi.2018.5.4(4)

Kiryan, M., Radchenko, O., Kiryan, S. (2017). Accounting budget financing field experimental station in Ukraine. *News of the national academy of sciences of the Republic of Kazakhstan series of agricultural sciences*, 3(39), 14-25.

Kowo, S. A., Adenuga, O. A. O., Sabitu, O.O. (2019). The role of SMEs development on poverty alleviation in Nigeria. *Insights into Regional Development*, 1(3), 214-226. https://doi.org/10.9770/ird.2019.1.3(3)

Mackevičius, J., Šneidere, R., Tamulevičienė, D. (2018). The waves of enterprises bankruptcy and the factors that determine them: the case of Latvia and Lithuania. *Entrepreneurship and Sustainability Issues*, 6(1), 100-114. http://doi.org/10.9770/jesi.2018.6.1(8)

Makarova, V., Boguslavskaya, S., Reva, D. (2019). Evaluating the effectiveness of state support for small businesses, *Agro-industrial complex: economy, management*, 2, 32-45.

Mizanbekova, S. K, Trineeva, L. T., Bogomolova, I. P. (2016). Cost Management and Controlling (textbook). Moscow – Nasirddinova V. V. publishing house, 170 p.

Mizanbekova, S. K., Vasilenko, I. N., Bogomolova, I. P., Bogomolov, A.V. (2019). Strategic planning of innovative development of the enterprise in the conditions of increasing competition and risks. *Equipment and technology of food production*. Kemerovo technological Institute of food industry, 1, 144-158

### JOURNAL OF SECURITY AND SUSTAINABILITY ISSUES ISSN 2029-7017 print/ISSN 2029-7025 online

Noeva, E. E., Egorova, A. A. (2019). Assessment of Financial Stability of Small Agricultural Enterprises and Ways to Improve it. *Economics of Agricultural and Processing Enterprises*, 11, 58-63.

Palatkin, I. V., Kudryavtsev, A. A., Pavlov, A. Yu. (2018). Agricultural Credit Consumer Cooperatives as an Institute of Rural Development, *Economics of Agricultural and Processing Enterprises*, 3, 42-46.

Petrenko, Y., Vechkinzova, E., Antonov, V. (2019). Transition from the industrial clusters to the smart specialization of the regions in Kazakhstan. *Insights into Regional Development*, 1(2), 118-128. https://doi.org/10.9770/ird.2019.1.2(3)

Tireuov, K., Mizanbekova, S., Kalykova, B., Nurmanbekova, G. (2018). Towards food security and sustainable development through enhancing efficiency of grain industry. *Enterpreneurship and Sustainability Issues*, 6(1), 446-455. http://doi.org/10.9770/jesi.2018.6.1(27)

Tireuov, K.M. (2016a). Agribusiness in a globalized economy. Monograph. Almaty, 229 p.

Tireuov, K.M. (2016b). AIC of Kazakhstan: the organization of innovative activity. Monograph. Almaty, 162 p.

Tvaronavičienė, M. (2018). Toward efficient policy making: forecasts of vulnerability to external global threats. *Journal of Security and Sustainability Issues*, 7(3), 591-600. https://doi.org/10.9770/jssi.2018.7.3(18)

Tvaronavičienė, M. (2017). Clusters, innovations and energy efficiency: if relationship could be traced. *Marketing and Management of Innovations*, 2, 382-391. http://doi.org/10.21272/mmi.2017.2-35

Usenbayev, T. M., Alina, G. B., Dzhumabekova, A. T., Toizhigitova, Zh. A., Esengeldinova, S. Zh. (2019) Features of small and medium-sized business development in the Republic of Kazakhstan. *Bulletin of Karaganda University*. The Economic Series, 4, 298-304.

Włodarczyk, B., Szturo, M., Ionescu, G.H., Firoiu, D., Pirvu, R. Badircea, R. (2018). The impact of credit availability on small and medium companies. *Entrepreneurship and Sustainability Issues*, 5(3), 565-580. https://doi.org/10.9770/jesi.2018.5.3(12)

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