

PROMOTING FINTECH FINANCING FOR SME IN S. CAUCASIAN AND BALTIC STATES, DURING THE COVID-19 GLOBAL PANDEMIC

Vakhtang CHARAIA ¹, Archil CHOCHIA ^{2*}, Mariam LASHKHI ³

¹*Faculty of Business and Technology, University of Business and Technology, Tbilisi, Georgia*

²*School of Business and Governance, Department of Law,
Tallinn University of Technology, Tallinn, Estonia*

³*Faculty of Business Administration, Georgian Aviation University, Tbilisi, Georgia*

Received 13 April 2021, accepted 11 August 2021

Abstract. *Purpose* – to analyse the digitalization trends in the Central Caucasian (Georgia, Azerbaijan and Armenia) and Baltic States with the aim of reducing a financial gap for the Small and Medium size Enterprises in Georgia, Azerbaijan and Armenia.

Research methodology – comparative analysis between Baltic and Caucasian countries are made to analyse the basic positions and farther development opportunities for Georgia, Azerbaijan and Armenia.

Findings of the given paper – while SME sector crucially important contributor to employment, diversification and productivity in any country of the world and especially in developing ones, they still face significant credit constraints through traditional credit providing institutions. However, the trend is changing and modern digital technologies from the fintech area are providing new alternatives, which already had been widely used in Baltic, but still are waiting their chance in Georgia, Azerbaijan and Armenia, with different level of progress and readiness.

Research limitations – some statistical data does not exist for all six countries or were possible to obtain for different periods of time. Lack of academic literature on fintech in Caucasian countries.

Practical implications – It can provide a useful perspective for researchers, academics, investors, investment managers, decision-makers, and scientists.

Originality/Value – The paper analyses three advanced European Union member state's (Lithuania, Latvia and Estonia) fintech positions and perspectives as a model of development for three developing Caucasian states (Georgia, Azerbaijan and Armenia).

Keywords: Small and Medium-sized Enterprises, fintech, Caucasian states, Baltic States, financial gap, alternative financing.

JEL Classification: G23, M21, E44.

*Corresponding author. E-mail: archil.chochia@taltech.ee

Introduction

Small and Medium Enterprises (SMEs) all over the world are considered to be an essential segment of any economy (Lu, 2018), no matter it is developed or developing. SMEs play a crucial role in terms of employment, stable salaries, tax revenues, inclusiveness, sustainable economic development and etc. which is essential for any country's progress. Especially when considering the global pandemic and/or constant regional, political and economic conflicts all over the world (Shatakishvili, 2021).

Despite SME's crucial role in the economy, still they face huge challenges, especially in developing countries as Georgia, with some better grounds in developed economies as Estonia. However, standard SME challenges in both of them and at any other country worldwide are nowadays stressing a huge extra problem in face of Coronomic crisis (Papava & Charaia, 2020). On the other hand, any challenge or even a problem could be used as a great turning moment, which seems to be realistic in this case through fintech.

Despite the fact that financing of SME sector has never been an easy task, especially in developing countries and extremely complicated outside the regional centers of those developing countries, global pandemic has almost shut down the cooperation between the banking and SME sector even further. Unfortunately, other sources of financing has never been developed at any significant level in those developing countries, such as Georgia, Armenia or Azerbaijan. Thus development and popularization of the fintech industry as an alternative way of SME financing and as a diversification instrument for financial sector are considered as specifically important to analyze, to guarantee the sustainable economic development ground.

Popularity and success of innovative source of crediting in developed countries, including Baltic States could be explained by different aspects, but most importantly: probability of getting a credit at a lower interest rate (Baber, 2020; Lee & Shin, 2018); faster loan processing speed, in comparison to traditional sources (Sangwan et al., 2019); lower operating costs (Ozili, 2018); more comfort in credit getting process, especially in remoted areas with necessity to travel to the nearest bank; less bureaucracy; and etc.

While, on the other hand the lenders side is also benefiting from, the fact that fintech companies in general are backed by investor's and not company's own money (Anagnostopoulos, 2018); decreasing credit risks based on specific big data analysis software (Lu, 2018), thus being on profit end and satisfying both donors and borrowers with lower risks and lower interest rates, as well as the economy in general with more financial (and not only) activates which most likely would not happen in other case.

Based on the SME financing shortages, especially under the covid-19 pandemic period and having a recent success story of fintech industry from different countries, including Baltic States, creates a hypothesis that S. Caucasian states could also benefit from such innovative technologies. However, first of all the level of readiness in those countries, to implement the fintech methodology should be studied.

To study the fintech readiness in selected countries, the prism of Gross expenditure on R&D, High-tech net exports as percent of total trade, non-cash transaction trend and other valuable observations were made; as well as analysing current capacities and the progress for the last years through the data of Global Innovation Index. The last, but not the least importantly it was made a comparison on availability of Alternative Financing sources and its amount in absolute numbers on per capita bases for each selected country.

1. Literature review

SMEs are the leading form of enterprise globally, accounting for approximately 99 percent of all firms in the Organisation for Economic Co-operation and Development [OECD] area and guaranteeing: around 70 percent of total employment, 50 percent value creation and 60 percent of all value added on average (OECD, 2016). While in emerging economies contributing up to 45 percent of total employment and 1/3rd of GDP (OECD, 2017). At the same time, in the context of informal businesses SMEs contribute to more than 1/2 of employment and constitute from 30 to 60 percent of various countries' GDP, irrespective of income levels (Cornelli et al., 2019). However, they receive merely 17 percent of bank credits for instance in UK, while the rest goes to large corporations (Lu, 2018).

With significant existing problems in finance access from the banks (International Finance Corporation [IFC], 2010; Global Findex database [GFD], 2017) and constant regulations strengthening procedures by national banks all over the world, innovative digital solutions could be seen as a paradigm solving for SME's financial challenges. Berger and Udell (2006) study shows, that SMEs regularly expression financing restrictions due to: poor transparency, irregular financial management, and especially lack of collateral, which in case of developing countries usually exceeds double time of the loan amount itself. However, while richer economies has significantly improved their enjoyment, poorer ones still suffer from: lack of diversified financing sources; poorer IT infrastructure; immature innovative digital technology opportunities and etc.

However, progress is also tangible, even in developing countries. While many studies claim that in general bank loans are still dominant financing source (Schweitzer & Barkley, 2017); and considering that literature on innovative digital financing resources is still limited (Hua et al., 2019); some studies already show, that the knowledge and popularity of financing through innovative digital technologies called – fintech (Walden, 2020), which started in 2000th and progressed after the last global financial crisis of 2008–2009 years, significantly advancing in the last decade (Jakšič & Marinč, 2019; Cornell University, INSEAD, the World Intellectual Property Organization [GII], 2020), and step by step is becoming a trusted and desired credit source for SMEs.

Fintech role in the fourth industrial revolution is crucial, but what is more important is that it has a huge impact on SME development (Chang et al., 2020). But, its own role in fintech popularization have also played Covid-19 global pandemic, providing an un-substitutable credit getting opportunity in fintech already popular countries and desire for such instrument in not yet fintech-ed economies.

However, there are some risks as well, which should be considered at a highest level, those including: the biggest threat in face of cybersecurity risk; financial and business illiteracy; challenges with online data protection; difficulties with Internet connectivity and usage, especially in developing countries; regulatory frameworks, which should be updated, but could have opponents from the local financial sector, mainly banking lobbyist and etc. (G20, 2020). Therefore, strong supportive measures should be guaranteed by the local governments to protect the best interests of SME sector.

2. Research methodology

Fintech is a relatively new trend in business financing all over the world, which is already highly popular in developed economies, but has a great room for development and improvement in developing S. Caucasian economies, such as Georgia, Armenia and Azerbaijan. While analyzing those country's potential, experience of Baltic States is taken as a success story. Outside S. Caucasian and Baltic states, an overall global experience and trends in fintech industry are also taken into account.

For the goals of this paper a qualitative research was carried out. Collection of information was done by analyzing different sources providing data for all six countries, including those from scientific articles, international rankings, international financial institutions, statistical offices and other valuable and trust-worthy sources. Unfortunately, not all interesting data was available for all six selected countries, thus making impossible to analyze them.

The paper is structured in a way to observe overall global trends and especially concentrates on Baltic states experience, since in many publications this countries are named as one of the top reformers and fintech achievers, which could be a great orientation for the three S. Caucasian states which still have much to reform and achieve, starting from the basic fintech infrastructure and continuing with relatively complicated legislative and technical procedures, as well as readiness of the system to the novelty.

To better understand the role of SME sector for the local economy, both in developed and developing states, we analyzed it from different angles, including employment, tax generation, amount of value added and etc. An analysis of the digital infrastructure and its role in the financial system of selected countries and some other players globally, helped to better understand the gaps among them, thus to better understand the needs of developing states to follow those outperformers.

3. SME and fintech global trends

Number of different indicators important for fintech development and strengthening varies around the world and even between inside the continents and country groups like Baltic and Caucasian states. However, it has a solid ground already with the 57% of world population with the internet users, 69% of population with the bank accounts, making online purchases or paying their bill online around 1/3 of the world population (see Table 1).

Table 1. Different statistical data important for fintech promotion (source: Datareportal, n.d.)

	Number of active internet users	Internet users as a percent of population	Number of active mobile internet users	Mobile internet users as a percent of population	Has an account with the financial institution	Has a credit card	Makes online purchases or pays bills online
World Average	4.388 bln	57%	3.986 bln	52%	69%	18%	29%

SME sector is the main driver for job creation and diversified economic activities in the most developing and developed economies, while having a significant role globally at any country's economy. SME sector is often a goal for those are not able to start a job elsewhere, but motivated to create workplace themselves, in most cases hiring others and benefiting local economy with employment, taxes and often even decreasing import dependence, especially in developing world, which has a desperate need in investments (Charaia et al., 2020).

Despite global data fragmentation and differences in methodologies, still it could be concluded that formal and informal SMEs account for around 60 to 70 percent of the GDP, in low, middle and even in high income countries. This type of company's represent more than 9 out of 10 businesses and employs ½ of all employees globally (G20, 2020), thus making those companies essential for any country.

However, SMEs still receive a disproportionately small share of credits in comparison to bigger companies (Arzeni & Akamatsu, 2014), which hinders both SMEs and the whole economy's potential at large. Moreover, because of tightened capital and liquidity regulations, especially after the financial crisis of 2008, banks are encouraged to scrutinize and charge higher interest rates (Bucă & Vermeulen, 2017), in contrast to bigger businesses (Yoshino & Yamagami, 2017). However, the difference between developed and developing countries is still huge and one of the most important aspect here is the issue of collateral, which is a must in developing world, while for instance in Europe SMEs are getting credits mainly in the form of credit lines that are typically uncollateralized (see Columba et al. 2010 for the Italian case).

Theoretically the capital market could play an important role in avoiding complicated banking procedures and higher interest rates for SMEs (Thompson et al., 2018). However, unlike developed economies the capital markets in developing countries are seldom at a point to guarantee massive FDI inflow for inclusive economic growth (Charaia, 2014, 2017) and/or to substitute the banking sector even partially. Reason here could be different, starting with the negative experience of providing money to any private company and finishing with systemic and legal problems (Lashkhi & Charaia, 2017).

In the path of modern digital technologies development providing one of the most important elements for economic development (Benashvili, 2017), a key role is devoted to the number of Adults with a bank account (Table 2), which varies hugely starting from little bit more then 1/10th and finishing with total 100 percent success, usually with better results in developed countries.

Table 2. Adults with the banking account (percent) in different countries (source: The Global Findex database, 2017)

Country	Percent	Country	Percent	Country	Percent
Central African Republic	14%	Romania	58%	Greece	85%
Pakistan	21%	Ukraine	63%	UAE	88%
Morocco	29%	Turkey	69%	Israel	93%
Egypt, Arab Rep.	33%	Hungary	75%	Korea, Rep.	95%
Albania	40%	Russian Federation	76%	Canada	100%

According to the Capgemini (2020) financial services analysis, only in the last five years (before pandemic year) from 2015 to 2019 the volume of non-cash transactions globally has been increased by almost 62 percent, while the forecast from 2019 to 2023 goes as far as 54% higher, despite the solid basic ground of 2019. In absolute numbers, grows is even more impressive with growth from 2015th 437.4 million transactions to almost 1.1 billion in 2023 (Figure 1). These numbers say, that fintech ground is becoming more and more solid, especially in APAC and Europe area, which could finally end in higher SME access to finance in this regions through digital technologies.

To go more into details, MSME sector financial gap to GDP all over the world is significant, despite the country’s economic development and income level being it: High Income (HI), Upper Middle Income (UMI) or Lower Middle Income (LMI) (Figure 2). Therefore, the ground for alternative crediting sources is a great tool for the problem solving.

Moreover, introduction and adoption of new digital technologies in last decades and especially in the prism of its extreme global popularization, as well as new business models created based on them, has led to the double-digit growth rates for digital payment transactions over the last five years, with emerging economies showing the greatest results (McKinsey, 2019).

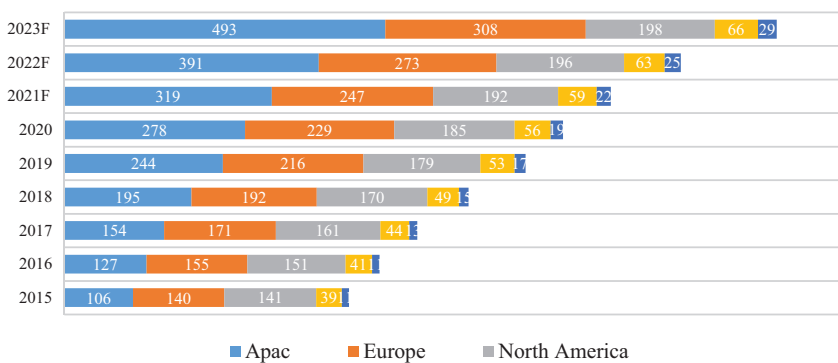


Figure 1. Worldwide volume of non-cash transactions (billions), 2015–2023 (source: Capgemini, 2020)

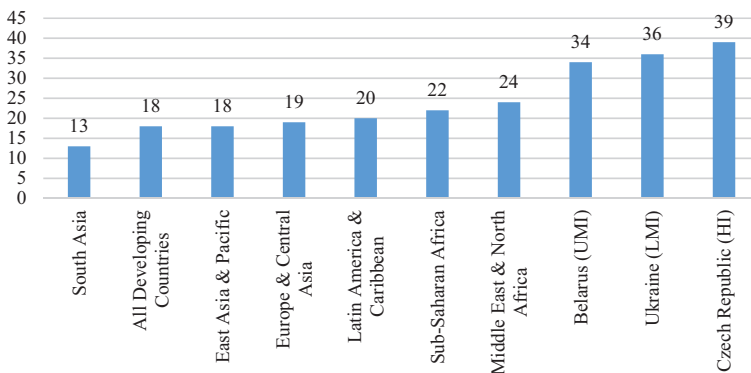


Figure 2. MSME Finance Gap to GDP (Percent), in different countries and regions (source: SME Finance Forum, 2021)

The growth in non-cash transactions while popular globally, has different growth trends in different parts of the world, with the APAC region only third in 2015, growing to the top leader in 2020 and keeping the dominance for 2023, with India and China expected to drive the region's remarkable +21.1% compound annual growth rate between 2020–23, overcoming European average more than two times (10.34%). At the same time, Europe continues to be the second biggest for the whole given period of time, especially based on Central and Eastern European countries activity. The growth in general could be explained by the unprecedented e-commerce and the availability of mobile payment solutions globally. Significant advances in technology are shaping the future of not only big companies, but also SMEs.

Fintech popularity is not based only on its own advantages, but supported by the global trends such as:

- by 2023, several countries launching digitization initiatives with ultimate goal of eliminating cash from circulation (Ford & Joliet, 2020);
- By 2024, mobile proximity payment users worldwide doubling to around 2 billion units, in comparison to less than 1 billion in 2019 (Ford & Joliet, 2020);
- Global FDI growth trend, guaranteeing globalisation's economic benefits not only for developed, but also developing countries (Charaia et al., 2018) and thus global innovations diffusion need.

At the same time as for nowadays, credit cards are still the dominant source for non-payments (72%), however new and new local and regional payment systems appearing all over the world (Capgemini, 2020), will probably change the situation soon, most probably decreasing the role of banking system and benefiting the fintech industry bigger than ever before.

Above to all challenges for SME industry always had, Coronomic crisis all over the world put an extra experiment to the sectors, leading to global recession in 2020, with even harder predictions that it will be needed several more years to return at least to 2019 parameters in case vaccination process will be smooth. Moreover, causing mass global supply chain changes (Charaia & Lashkhi, 2020) and public debt growth, which theoretical could hinder SME sector development in post pandemic period (Papava & Charaia, 2021). In other worlds SME sector globally has faced an unprecedented challenges, which lead to mass unemployment, bankruptcy and lack of possibility to cooperate with traditional sources of crediting. The situation is especially hard in those developing countries, where government's financial and other sources of support to their businesses is extremely limited, especially through modern digital technologies.

On the other hand, despite pandemic challenges, the latest research done in 114 jurisdictions all over the world shows that regulators observed a strong up rise of fintech services since the global pandemic start, in particular: digital payments, remittances, digital banks, digital savings or deposits use has been raised the most in the economies affected by global pandemic the most (World Bank [WB] & Cambridge Centre for Alternative Finance [CCAF], 2020). As it could be easily guessed Covid-19 has boosted fintech grow globally. However, the impact of coronomic crisis on market performance is varying across geographic jurisdictions. Transactions growth through fintech companies has been more successful and consequently reached the top amounts in the countries with more severe lockdowns. Also, relatively high charges for traditional ways of SME financing during the global pandemic has become more and more heavy burden for the sector from one side, while making it more complicated to

finance such business at a times of lockdowns from the bank's perspective, on the other. However, at the same time, growing benefits were accompanied by increased risks related toward cybersecurity (WB & CCAF, 2020).

4. SME and fintech in the Caucasian and Baltics

Adaptation of innovative digital technologies, as well as fintech elements appearance in the Caucasian countries is already a fact, which has already been much faster developed in Baltic States. At the same time, unlike developed economy's with Online channels expected to supplant phone and in-person for SME sales, which is already a fact for US and/or UK markets (McKinsey, 2020), experience shows that in developing countries as Georgia, Armenia and Azerbaijan, customers still prefer a traditional forms of in person purchasing, which is closely related to the share of adults with bank account and corresponding products among local population. Varying among different countries, with an average 69 percent globally (Demirgüç-Kunt et al., 2017), in comparison to the 46 percent in Caucasian and 91.3 percent in Baltic states.

Statistical data shows that internet and banking related issues, such as number of active internet users, having an account at financial institution, making online financial activities and etc. (see Table 3) are better developed in Baltic States, rather than in C. Caucasian. At the same time difference in between those Baltic and C. Caucasian states is also significant with Estonia being the leader in both of them in not in absolute, but in percent of total population being involved in those activities. This number could be further increased in all states pushed by the pandemic reality and necessity, which most probably will continue for the next years.

Table 3. Specific parameters in Caucasian and Baltic States (source: Datareportal, n.d.)

	Estonia	Latvia	Armenia	Lithuania	Georgia	Azerbaijan
Number of active internet users	1.28 mln	1.66 mln	2.13 mln	2.6 mln	2.7 mln	8 mln
Internet users as a percent of total population	98%	87%	72%	91%	69%	80%
Total number of active mobile internet users	1.09 mln	1.43 mln	1.82 mln	2.29 mln	2.4 mln	5.16 mln
Mobile internet users as a percent of total population	83%	74%	62%	80%	61%	52%
Has an account with the financial institution	98%	93%	48%	83%	61%	25%
Has a credit card	29%	17%	8.1%	16%	15%	5.3%
Makes online purchases or pays bills online	75%	61%	15%	56%	14%	9.4%

Despite the fact of having more or less the same structure of SME within the local economies, through the number of enterprises, employment and value added created in all Baltic and Caucasian countries (Table 4), perspectives of SME business development in the given regions and even inside those regions are different. Those numbers of SME sector most probably will be changed as a result of Covid-19 effect on those countries, but will not lose their dominance anyway.

Different is the financial gap to GDP in Baltic and Caucasian countries, with the lowest number in Latvia (5%) and Highest in Estonia (23%) and Azerbaijan somewhere in between (13%). Which needs further detailed research (Figure 3).

Thanks to the capacity of innovation and adaptation to fast-changing global and local challenges (including global pandemic) in Caucasian and Baltic states, SMEs are a key to shift towards modern diversified economies, guaranteeing a higher-quality workplaces and sustainable growth, higher than ever before. While in the Caucasian countries, despite having a huge potential, the reality is different, basing on low levels of labor productivity in comparison to EU level, which on its turn causes SME concentration on low value added sectors of wholesale, retail and seldom manufacturing, consequently limiting their integration into global value chains and lagging behind the real potential.

Unlike Armenia with all its significant political changes in last years and ambitious plans toward SME development; as well as Azerbaijan's systemic economic challenges in regard to oil prices, however still big plans on SME direction; Georgia is the true leader of Caucasian countries from the Eastern Partnership perspective, with already a solid ground in 2016 and improvements made in the area of SME sector development with: the adoption of the SME Development Strategy and respective action plans, the simplification of business registration

Table 4. SME sector statistics in Baltic and Caucasian countries (source: OECD, 2020)

	Azerbaijan	Georgia	Estonia	Armenia	Lithuania	Latvia
Number of enterprises	97.9	99.7	99.7	99.8	99.8	99.8
Employment	42.9	64.2	78.2	66.3	75.9	79.4
Value added	13.4	60.5	76.7	60	69.4	71.1

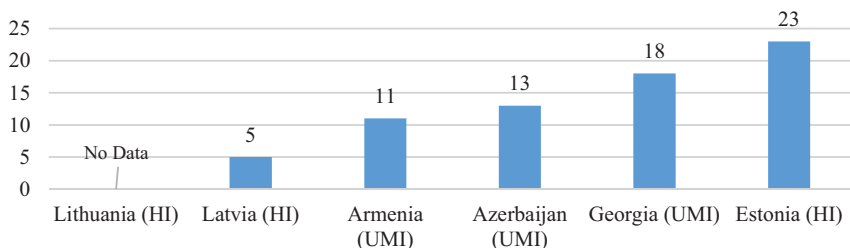


Figure 3. MSME Finance Gap to GDP (Percent), in Caucasian and Baltic states (source: SME Finance Forum, 2021)

and the increase in e-government services have significantly strengthened the operational environment for SMEs and in general the business environment (OECD, 2020).

For SMEs to stay competitive in developed countries (versus developing ones), its obligatory to maintain and increase a higher level of innovation (Hogeforster, 2014), since they usually are on the weak side in terms of labor force price, higher taxes and more complicated regulations. Thus, advantages need systemic and systematic financing. Caucasian countries are doing relatively poor in terms of GERD as percent of GDP and percent of innovative SMEs (or enterprises), in comparison to EU average, where Baltic states are positioning above the middle line (OECD, 2020).

Both for Caucasian and Baltic states to be discovered as top economies (except Azerbaijan), in terms of Alternative Finance per Capita Volumes is promising. With Latvia and Estonia, number 3 and number 4 correspondingly, for in the global ranking. Also, some Baltic platforms contributing not only to their domestic markets, but together with others, also supporting the developments in the Caucasian region, finally positioning Armenia (5 foreign and 0 local based platforms operating) and Georgia (6 and 0 local based platforms operating) on the first and second places correspondingly, among the upper middle income countries (CCAF, 2020) and becoming one of the top international performers globally (Figure 4). But with no direct SME support line, but just in terms of fintech development.

Baltic States leading in Global Innovative Index are much further their Caucasian peers, showing higher rankings, higher spending and higher high-tech export (Figure 5). Based on their success not only regionally, but also at a global scale Baltic states experience could play a huge positive impact on Caucasian countries, especially in legislative reform making, practical approaches and business to government cooperation prism.

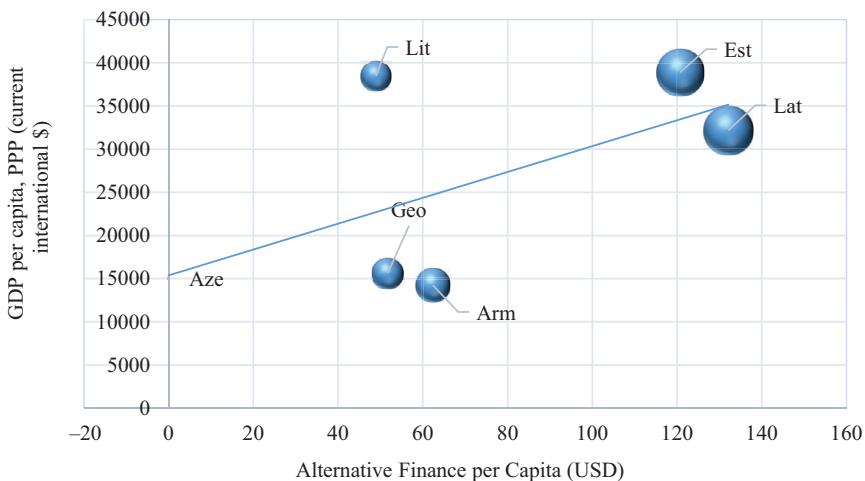


Figure 4. Alternative Finance per capita volumes by countries relative to GDP per capita PPP (source: WB & CCAF, 2020)

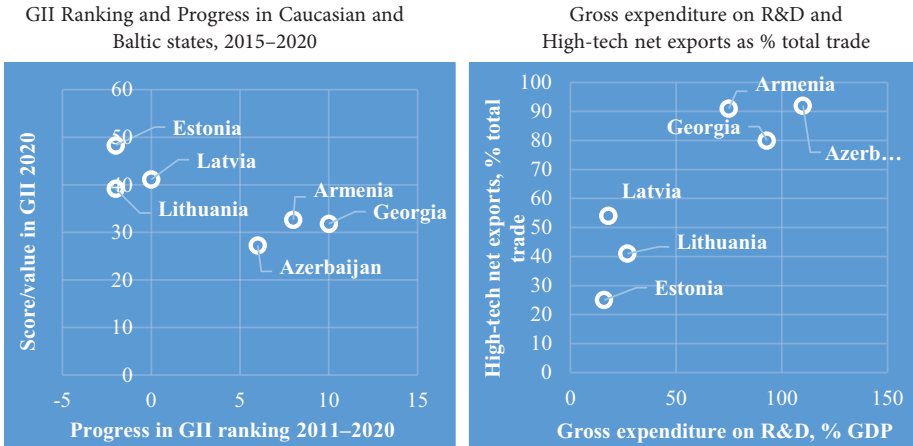


Figure 5. Different data for the Baltic and Caucasian countries (source: INSEAD [GII], 2011; GII 2020; Authors calculations)

5. Discussion of the results

SMEs sector all over the world is considered to be an essential part of any economy, no matter it is a developed or developing state. SME plays a crucial role in terms of employment, tax revenues, economic development and etc. However, SMEs still receive a disproportionately small share of credits in comparison to bigger companies, which hinders both SMEs and the whole economy's development potential, especially under the global pandemic circumstances.

Popularity of digital and innovative source of credit are based on: probably of getting a credit at a lower interest rate; faster loan processing speed, in comparison to traditional sources; lower operating costs; more comfort in credit getting process; less hierarchy; and etc. Such advantages made it desirable all over the world, however to implement the fintech methodologies, countries should have a certain level of infrastructural, legislative, digital and etc. readiness, which showed to be a great challenge for small, developing countries, such as Armenia, Georgia and Azerbaijan.

At the same time, there are several risk factors, which should be considered at a highest level: cybersecurity risk; financial and business illiteracy; challenges with online data protection; difficulties with Internet connectivity and usage, especially in developing countries; regulatory frameworks and etc. Therefore, strong supportive measures should be guaranteed by the local governments to protect the best interests of SME sector.

During last decade, the volume of non-cash transactions globally has increased significantly, with almost 62 percent only in last 5 year, with the forecast of further 54% growth in next five years, making up to 1.1 billion transactions for 2023. This will provide a solid ground for fintech development all over the world, increasing SME sector opportunities as well and decreasing MSME sector financial gap to GDP all over the world.

Fintech role in the fourth industrial revolution is crucial, which has a huge impact on SME development. Among other solid reasons, fintech popularization also has been increased

through Covid-19 global pandemic. Above to all challenges for SME industry always had, Coronomic crisis all over the world put an extra experiment to the sector.

On the other hand, despite pandemic challenges, researches shows that regulators observed a strong up rise of fintech services since the global pandemic start, in particular: digital payments, remittances, digital banks, digital savings or deposits use has been raised the most in the economies affected by global pandemic the most.

As it could be easily guessed Covid-19 has boosted fintech growth globally. However, the impact of coronomic crisis on market performance is varying across geographic jurisdictions. Transactions growth through fintech companies has been more successful and consequently reached the top amounts in the countries with more severe lockdowns.

Despite the fact of having more or less the same structure of SME within the local economies, through the number of enterprises, employment and value added created in all Baltic and Caucasian countries, perspectives of SME business development in the given regions and even inside those regions are different. Use of innovative digital technologies, as well as fintech elements appearance in the Caucasian countries is already a fact, which has already been much faster developed in Baltic States, guaranteeing more stable and sustainable way of economic development; and even contributing not only to their domestic markets, but also supporting the progress in the S. Caucasus, finally positioning Armenia and Georgia on the first and second places correspondingly, among the upper middle income countries.

Different analysis provided in the paper, show the unlike Baltic States, Caucasian countries has much to work on the fintech infrastructure first, to be ready for its full-fledged implementation. Basic digital infrastructure, innovative legislation and diversification of financial market and its products, will be vital to get the maximum results from fintech promotion in Georgia, Armenia and Azerbaijan.

Conclusions

Covid-19 global pandemic has played a significant role in fintech industry boost all over the world. Raise of interest toward fintech in Caucasian states was predictable, if considering the financial sector limitations and the financial gap for SME businesses in these countries. However, progress is still limited due to low development of modern financial technologies within those countries.

Baltic States leading in different international rankings related to the fintech industry development and strengthening issues, such as Global Innovative Index, has much higher progress and thus better performance in contrast to their Caucasian peers.

Showing higher rankings, higher spending and higher high-tech export, Baltic States are a good example for Georgia, Azerbaijan and Armenia in fintech development direction.

Based on their success not only regionally, but also at a global scale Baltic states experience could play a huge positive impact on Caucasian countries, especially in legislative reform making, practical approaches and business to government cooperation prism.

Further fintech popularization in Georgia, Azerbaijan and Armenia, based on Baltic States achievements could lead to lower financial gap for SME sector and overall better economic performance of those countries, thus achieving more stable and sustainable economic

growth. However, the sufficient preliminary work should be done to meet the standards where fintech industry will be able to operate freely and successfully.

Development of alternative financing resources, improving digital infrastructure, updating/creating modern and fintech oriented legislature, as well as giving more incentives to R&D development in S. Caucasian countries could lead them to easier access to finance and thus stronger SME sector, which could be a solid ground for the sustainable economic development.

References

- Anagnostopoulos, I. (2018). Fintech and regtech: Impact on regulators and banks. *Journal of Economics and Business*, 100, 7–25. <https://doi.org/10.1016/j.jeconbus.2018.07.003>
- Arzeni, S., & Akamatsu, N. (2014). *ADB-OECD study on enhancing financial accessibility for SMEs: Lessons from recent crises*. Asian Development Bank.
- Baber, H. (2020). FinTech, crowdfunding and customer retention in Islamic Banks. *Vision*, 24(3), 260–268. <https://doi.org/10.1177/0972262919869765>
- Benashvili, G. (2017). Boosting entrepreneurship in Georgia development of Fab Labs. *Press Academia Procedia*, 4(1), 29–33. <https://doi.org/10.17261/Pressacademia.2017.512>
- Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance*, 30(11), 2945–2966. <https://doi.org/10.1016/j.jbankfin.2006.05.008>
- Bucă, A., & Vermeulen, P. (2017). Corporate investment and bank-dependent borrowers during the recent financial crisis. *Journal of Banking & Finance*, 78, 164–180. <https://doi.org/10.1016/j.jbankfin.2017.02.004>
- Cambridge Centre for Alternative Finance. (2020). *The global alternative finance market benchmarking report*. Cambridge University.
- Capgemini. (2020). *World payment report*. Financial services analysis. <https://www.capgemini.com/mx-es/wp-content/uploads/sites/24/2020/12/WPR-Hallazgos-Clave.pdf>
- Chang, V., Baudier, P., Zhang, H., Xu, Q., Zhang, J., & Arami, M. (2020). How Blockchain can impact financial services—The overview, challenges and recommendations from expert interviewees. *Technological Forecasting and Social Change*, 158, 120166. <https://doi.org/10.1016/j.techfore.2020.120166>
- Charaia, V. (2014). Local investment climate and the role of (sustainable) FDI: The case of Georgia. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 8(2), 425–428.
- Charaia, V. (2017). The role of multinational enterprises' investments in emerging country's economic development, case of Georgia. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 11(3).
- Charaia, V., & Lashkhi, M. (2020). Georgia and China: The economic ties that could one day bind. *A Sea Change?: China's Role in the Black Sea*, 26.
- Charaia, V., Chochia, A., & Lashkhi, M. (2018). The Caucasus 3 plus the Baltic 3 and economic cooperation with China. *Baltic Journal of European Studies*, 8(2), 44–64. <https://doi.org/10.1515/bjes-2018-0015>
- Charaia, V., Chochia, A., & Lashkhi, M. (2020). The impact of fdi on Economic development: The Case of Georgia. *TalTech Journal of European Studies*, 10(2), 96–116. <https://doi.org/10.1515/bjes-2020-0017>
- Columba, F., Gambacorta, L., & Mistrulli, P. E. (2010). Mutual Guarantee institutions and small business finance. *Journal of Financial Stability*, 6(1), 45–54. <https://doi.org/10.1016/j.jfs.2009.12.002>

- Cornell University, INSEAD, & the World Intellectual Property Organization. (2020). *Global Innovation Index: Who will finance innovation?* https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf
- Cornelli, G., Davidson, V., Frost, J., Gambacorta, L., & Oishi, K. (2019). *SME finance in Asia: Recent innovations in fintech credit, trade finance, and beyond* (ADBI Working Paper Series No. 1027). Asian Development Bank.
- Datareportal. (n.d.). <http://www.datareportal.com>
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. The World Bank. <https://doi.org/10.1596/978-1-4648-1259-0>
- European Commission. (2019a). *SBA Fact sheet Estonia*. <https://ec.europa.eu/docsroom/documents/38662/attachments/9/translations/en/renditions/native>
- European Commission. (2019b). *SBA Fact sheet Latvia*. <https://ec.europa.eu/docsroom/documents/38662/attachments/17/translations/en/renditions/native>
- European Commission. (2019c). *SBA Fact sheet Lithuania*. <https://ec.europa.eu/docsroom/documents/38662/attachments/18/translations/en/renditions/native>
- EU4business. (2019). *Investing in SMEs in the Eastern partnership. Azerbaijan country report*. <https://eu4business.az/uploads/20/08/10/f3b51b31d9a45ddb0f8b6f48689562.pdf>
- Ford, D., & Joliet, J. (2020). *Payment acceptance will never be the same after the COVID-19 pandemic* (report). Gartner.
- G20. (2020). *Promoting digital and innovative SME financing*. International Bank for Reconstruction and Development, The World Bank. https://www.gpfi.org/sites/gpfi/files/saudi_digitalSME.pdf
- Global Findex database. (2017). *MSME Finance Gap Database*. [http://smefinanceforum.org/sites/default/files/MSME%20Finance%20Gap%202018-19%20Update%20\(public\)%20.xlsx](http://smefinanceforum.org/sites/default/files/MSME%20Finance%20Gap%202018-19%20Update%20(public)%20.xlsx)
- Hogeforster, M. (2014). Future challenges for innovations in SMEs in the Baltic Sea Region. *Procedia-Social and Behavioral Sciences*, 110, 241–250. <https://doi.org/10.1016/j.sbspro.2013.12.867>
- Hua, X., Huang, Y., & Zheng, Y. (2019). Current practices, new insights, and emerging trends of financial technologies. *Industrial Management & Data Systems*, 119(7), 1401–1410. <https://doi.org/10.1108/IMDS-08-2019-0431>
- INSEAD. (2011). *Global Innovation Index*. https://www.wipo.int/edocs/pubdocs/en/economics/gii/gii_2011.pdf
- International Finance Corporation. (2010). *Scaling-up SME access to financial services in the developing world*. International Finance Corporation, World Bank Group, Washington D.C.
- Jakšič, M., & Marinč, M. (2019). Relationship banking and information technology: The role of artificial intelligence and FinTech. *Risk Management*, 21(1), 1–18. <https://doi.org/10.1057/s41283-018-0039-y>
- Lashkhi, M., & Charaia, V. (2017). Investment development path and motivations for Foreign Direct Investment in Georgia. *World Academy of Science, Engineering and Technology, International Journal of Economics and Management Engineering*, 11(11), 3213.
- Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, 61(1), 35–46. <https://doi.org/10.1016/j.bushor.2017.09.003>
- Lu, L. (2018). Promoting SME finance in the context of the fintech revolution: A case study of the UK's practice and regulation. *Banking and Finance Law Review*, 33, 317–343.
- McKinsey. (2019). *Global Payment Report 2019: Amid sustained growth, accelerating challenges demand bold actions*. New York. <https://www.mckinsey.com/~media/mckinsey/industries/financial%20services/our%20insights/tracking%20the%20sources%20of%20robust%20payments%20growth%20mckinsey%20global%20payments%20map/global-payments-report-2019-amid-sustained-growth-vf.ashx>
- McKinsey. (2020). *The 2020 McKinsey Global Payments Report*. New York. <https://www.mckinsey.com/~media/mckinsey/industries/financial%20services/our%20insights/accelerating%20winds%20of%20change%20in%20global%20payments/2020-mckinsey-global-payments-report-vf.pdf>

- Organisation for Economic Co-operation and Development. (2016). *Entrepreneurship at a Glance 2016*. OECD Publishing, Paris. <http://www.worldsmeforum.org/wp-content/uploads/2016/10/EntrepreneurshipataGlance.pdf>
- Organisation for Economic Co-operation and Development. (2017, June 7–8). Enhancing the contributions of SMEs in a global and digitalised economy. In *Meeting of the OECD Council at Ministerial Level*. OECD Publishing, Paris. <https://www.oecd.org/industry/C-MIN-2017-8-EN.pdf>
- Organisation for Economic Co-operation and Development. (2020). *SME Policy Index. Eastern Partner Countries 2020*. OECD, European Union, European Training Foundation and European Bank for Reconstruction and Development.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Papava, V., & Charaia, V. (2020). The economic crisis and some challenges for the Georgian economy. *GFSIS, Expert Opinion*, (136). <https://doi.org/10.2139/ssrn.3572124>
- Papava, V., & Charaia, V. (2021). *The problem of the growth of Georgia's Public Debt during the Economic Crisis under the COVID-19 Pandemic*. SSRN. <https://ssrn.com/abstract=3773635>
- Sangwan, V., Prakash, P., & Singh, S. (2019). Financial technology: a review of extant literature. *Studies in Economics and Finance*, 37(1), 71–88. <https://doi.org/10.1108/SEF-07-2019-0270>
- SME Finance Forum. (2021). *MSME finance gap*. <https://www.smefinanceforum.org/data-sites/msme-finance-gap>
- Schweitzer, M. E., & Barkley, B. (2017). *Is 'Fintech' good for small business borrowers? Impacts on firm growth and customer satisfaction* (Working Paper No. 17-01). Federal Reserve Bank of Cleveland. <https://doi.org/10.26509/frbc-wp-201701>
- Shatakishvili, D. (2021). Post-conflict passageway opportunities in the South Caucasus and Georgian domination perspectives. *International Journal of Research Publications*, 77(1), 81–87. <https://doi.org/10.47119/IJRP100771520211963>
- Thompson, J., Boschmans, K., & Pissareva, L. (2018). *Alternative financing instruments for SMEs and entrepreneurs: The case of capital market finance* (OECD SME and entrepreneurship papers No. 10). Organisation for Economic Cooperation and Development.
- Walden, S. (2020). *What is fintech and how does it affect how i bank?* Forbes.
- World Bank, & Cambridge Centre for Alternative Finance. (2020). *The global Covid-19 fintech regulatory rapid assessment report*. World Bank Group and University of Cambridge.
- Yoshino, N., & Yamagami, H. (2017). *Monetary economics: Practice and theory*. Keio University Press (in Japanese).