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## Article

### Institutional base and infrastructure development for non-cash payments in Azerbaijan

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# Institutional Base and Infrastructure Development for Non-Cash Payments in Azerbaijan

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## Abstract

The main objective of the research is to determine the essence of non-cash payments, trends of its formation, and its influence on lasted development. The research is based on methods of comparative analysis and systematic approach. As a result of the study, it is defined that non-cash payments are turned to the productive and innovative factor of economic growth. It is registered that regulatory acts in non-cash payments will lead to positive changes in the future state of Azerbaijan and some suggestions about measures that can be embodied in this direction are given in the research. The study claims more extensive statistical information and it is within limitations of research. Scientific innovation and originality of the research are to investigate the essence of non-cash payments. The practical significance of the research is that suggestions that are put forward in research can be used in the development of state programs about cashless payments growth.

## Keywords

Cashless payment, POS-terminals, ATM, Debit cards, Credit cards, Non-Cash transactions

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## 1. Introduction

The world has been influenced by a far-reaching technological revolution in various ways, which is most notably demonstrated by the Internet spread. The decrease in computing power costs facilitated technology and knowledge transfer on an unknown scale and enabled further internationalization of financial and trade flows to be pushed forward. Cash is no longer the distinctive chance to deposit many nations, and it shares the retail payment market with other payment tools such as cards, direct debits, or other digital methods of creating payments. Noncash operations are a way of creating payments without using physical money, a portal to advancing technology in the global marketplace. Cashless payment is a behavioral change in the people where people eliminate the usage of money as a medium of exchange for goods and services by allowing electronic transfer payments or non-electronic payment via cheques (Tee & Ong, 2016). By achieving a suitable scale of the system, the cost of emission money and its circulation can be reduced.

A cashless economy is a financial structure where operations do not predominantly take place in return for real money. This expansion of customer and business preference with respect to distinct payment techniques contributes to increased dematerialization of cash flow. Another beneficial impact is the decline in the shadow economy owing to the far higher transparency of noncash operations, which appears to be especially crucial for the state's entire economic scheme and branches against crime and tax avoidance. The study's primary goal is to define the dynamics and key drivers of non-cash transaction innovation and in specific the use of debit and credit cards instead of cash transfers in Azerbaijan. In addition to attempting to address the above statement, the article also provides an effort to define the main variables that may affect the central bank for the development of card payments. "Azerbaijan has great potential to fully transfer to digital payments. Mobile usage in Azerbaijan is very high. The government and the banking sector need to think cleverly how to expand payments through mobile" said Majeed Hujair who is the senior director of Visa School of Public Policy<sup>1</sup>.

The highest indicator in the number of ATMs in Azerbaijan was recorded in 2015. At that time, the number of ATMs used in the country was 2694 units<sup>2</sup>. Since then, the number of ATMs has dropped. Devaluation, the tendency to decrease the number of POS terminals and ATMs on the background of closing some banks seems obvious at first glance, but today there are serious questions about the rapid growth of non-cash payments in the world and the Azerbaijani government's

<sup>1</sup> [https://www.azernews.az/news.php?news\\_id=145693&cat=business](https://www.azernews.az/news.php?news_id=145693&cat=business)

<sup>2</sup> Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p. 52

efforts to increase cashless payments. There are therefore more serious obstacles to the widespread spread of non-cash payments in Azerbaijan. Even though there are many plastic cards in Azerbaijan, however, the amount of cashless transfers in the enterprise and the public sector is not high. Generally, entrepreneurs are interested in cash payments, which allow them to easily avoid paying taxes. The Central Bank of Azerbaijan with the speculation of overall affiliations is executing another endeavor "Non-cash Azerbaijan". The effort, executed with the assistance of the American Chamber of Commerce (AMCHAM), is a guide for the improvement of a cashless society in the country. The attempt has made an exceptional state program that reflects comprehensive measures for institutional headway, strengthening budgetary intermediation, collecting an automated organic framework, applying inventive portion structures, and invigorating cash related fuse. Talking at the presentation of the endeavor that the gathering and successful execution of the program will help in a concise range to make the reason for a cashless society in Azerbaijan.

The cashless exchanges are the advancement of a non-cash economy. It is an initial step to purchase and sell without physical money. This research features different goals of being cashless which are as pursues:

1. *Modernization of Payment System*: To drive advancement also, electronic payment is the first step. An effective and present-day payment framework is emphatically connected with financial advancement and is a key empowering influence for financial development.
2. *Effective Transaction*: To diminish the expense of banking administrations (counting cost of credit) drive monetary incorporation by giving progressively proficient exchange alternatives.
3. *Overseeing Inflation and Driving Economic Growth*: To improve the adequacy of money related approach in overseeing expansion and driving monetary development. What's more, the money approach expects to control a portion of the negative results related to the high use of physical money in the economy.
4. *High danger of Using Cash*: Cash empowers burglary and other money-related wrongdoings. It can likewise prompt money related misfortune on account of flame and flooding occurrences. It tends to be diminished by cashless exchanges.
5. *Casual Economy*: High money utilization results in a ton of cash outside the formal economy, therefore constraining the viability of money related strategy in overseeing expanding and empowering monetary development.
6. *Wastefulness and Corruption*: High money utilization empowers illegal tax, avoidance among other cash related false exercises can be diminished by cashless payments.

## 2. Theoretical and methodological background

Much interest has been dedicated to the growing use of non-cash instruments in retail payments. Payment happens when one financial operator exchanges an incentive to another specialist to release an obligation (Kahn & Roberds, 2009). "Retail payment" is a term used to depict payments that are made among the non-bank open, be that between people, between organizations, or among people and organizations (Cronin & McGuinness, 2010). The European Central Bank defines retail payments as mainly relatively low-value and urgent consumer payments. A retail payment usually involves an exchange of much lower value than an interbank or wholesale payment between financial institutions.

The formal-theoretical literature on the topic implies a replacement between various payment methods, cash, and non-cash operations. Rysman (2007) analyzes transaction information gathered by Visa and demonstrates that "network impacts" matter a lot in practice - while customers can keep various payment cards, they tend to focus all their card payments with a single card. Alvarez & Lippi (2009) demonstrate how cash supply was influenced by the development of cashless operations. The writers create a theoretical template using the Baumol-Tobin structure and demonstrate that the awareness of cash supply to interest prices reduces owing to the reduced chance price of ATM withdrawals and transaction expenses. Authors also indicate that, due to economic development directed at dematerializing cash, the welfare expenses of disinflation in Italy demonstrated to be lower than anticipated.

In the Azerbaijan literature, a progression of measurable reports arranged by the Central Bank of the Republic of Azerbaijan (CBAR) is especially critical. These present several significant bits of knowledge for the investigation of scale cashless insights. Be that as it may, the main investigation depicting universal contrasts is the CBAR report which does exclude investigation of the reasons for the present error between the generally low improvement of the clean non-cash market and a lot quicker development in other nations. According to the Law of the Republic of Azerbaijan on Non-cash settlements of December 16, 2016:

1. In case both parties are taxpayers the following settlements are to proceed only cashless:
  - a. Payments of taxpayers registered for VAT purposes;

- b. Payments of those taxpayers operating in the field of trade and (or) public catering, the volume of taxable transactions of which in any consecutive 12-month (months) period is more than AZN 200 000.00 with a total amount more than AZN 30 000.00 for a calendar month (applied from January 1, 2017);
  - c. Payments of other taxpayers with a total amount of transactions more than AZN 15 000.00 for a calendar month (applied from April 1, 2017)
2. Starting January 1, 2017, regardless the limits mentioned in the 1st paragraph the following settlements are to have proceeded only cashless:
- a. Tax payments, customs payments, and duties, administrative forfeiture defined by legislation, financial penalties, and interests, repayment of debts for leasing operations, loan origination;
  - b. Payments defined by "Law on Insurance Operations» and «Compulsory Insurance Law";
  - c. Service fee and other duties proceeded to state authorities, state properties and legal entities with a majority stake owned by the government, budget organizations and public legal entities;
  - d. Salaries (including those paid by the employer, other payments stipulated by the legislation), pensions, scholarships, financial aid, benefits (including one-time benefits), compensation and reparations paid by legal entities (except those operating in the field in the retail trade, catering, and services) the volume of transactions of which in any consecutive 12-month (months) period is up to two hundred thousand manats;
  - e. Payments for landline phone services and utility expenses;
  - f. Payment and return of non-interest funds (excluding payments from non-taxpayers) and other allocations;
  - g. Use of funds received from public procurement contracts (disbursement);
  - h. Education fee payments;
  - i. Transfers to travel agencies.
3. Taxpayers are allowed to buy the following from non-taxpayer individuals by cash:
- a. Purchase of agricultural products from agricultural producers;
  - b. Acceptance of non-ferrous and ferrous steel scarp;
  - c. Acceptance of paper, glass and plastic wastes for utilization and other purposes;
  - d. Acceptance of waste tires for utilization purposes.

According to the amendments from December 16, 2016, to the Tax Code of the Republic of Azerbaijan the following pecuniary penalties will be applied to the seller of goods (works, services) for the breach of the Law in case of cash payment for transactions which have been limited for cash:

- 10 % from a total amount of transaction for the first time;
- 20 % from a total amount of transaction for the second time;
- 40 % from a total amount of transactions for the third time and more.

Thus, it is essential for a prestigious and sustainable Bank to prevent its customers from possible penalties and sanctions for the transactions forbidden by law.

### 3. International experience

The effect of changes caused by computerization in payments have fluctuated far and wide, in both propelled economies and creating nations. Individuals, organizations, and associations everywhere throughout the world are dashing to embrace the most recent payment arrangements and counteract developing agonies during a technological change. Global volumes of non-cash transactions increased to 539 billion by 12% during 2016-2017 (Figure 1). In East Asia (32% growth) and MEA<sup>3</sup> (19.3%), it was observed a huge growth rate compared with others. Overall, the developing markets of Emerging Asia, MEA and Latin America recorded an accelerated growth rate of 22.6% in 2017, driven by financial inclusion efforts

<sup>3</sup> MEA(Middle East, Africa) now includes Turkey, South Africa, Saudi Arabia, Africa, and the Middle East, Russia, Other CE

and the adoption of mobile payments. Notable growth rates were recorded in Russia (39.5%), India (38.5%), China (34.6%), and South Korea (10.9%).



Figure 1. Worldwide non-cash transactions (billions), by region

Source: World Payment Report 2019 (Capgemini, BNP Paribas, p. 32)

#### 4. Infrastructure development for non-cash payment

In this section, it will be discussed the situation of non-cash payment in Azerbaijan by graphs. As is shown in the table, the fluctuations are recorded according to the 2019 statistics. The following table provides information about the number of ATMs distributed in Baku and in the country's regions. It is explicitly observed that there is a 6% difference between the capital city and other regions. Now, getting back to the details as indicated by the World Bank demonstration, the average number of people per terminal is 1.761, which means that the results in Azerbaijan are 2.28 times less than the world's average.

Table 1. Number of ATM and Pos-terminals

	ATM	Pos-Terminal
Baku	1421	40898
Regions	1226	26570
<b>Total</b>	<b>2647</b>	<b>67468</b>

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.54

In order to the 2019 POS terminal numbers, the difference between Baku and other regions illustrates that there is a tremendous gap which is approximately 22%. As far as rural development is concerned, it should be inclined with new technological types of equipment and innovations. However, the average number of people per POS terminal (one hundred thousand person) is about 15 which is 12,14 greater than the world average, 1,235 POS terminals per 100,000 capita according to 2015 statistics countries, and Other MEA countries. Other CE countries include Bulgaria and Croatia. Other MEA countries include Algeria, Kenya, Nigeria, Egypt, Israel, UAE, and Morocco.

This bar graph shows records of people per ATM, POS, and terminal in trade and service over 10 years in Azerbaijan. The peak value was recorded in 2010 with 4750 people per ATM. Further years this number declined rapidly until 2015 and fell to 3600 people. Because of the trend, the government made a decision about the non-cash payment laws on December 16, 2016, the movements increased and became stable in ATMs. On the other hand, POS descriptions over the years were declining gradually from 1,14 to 0,15. POS in trade and services pursued the fluctuation of POS further 5 years. Statistics of both POS and POS in trade and service were equal as a result of the government's stabilized policies in non-cash payments.

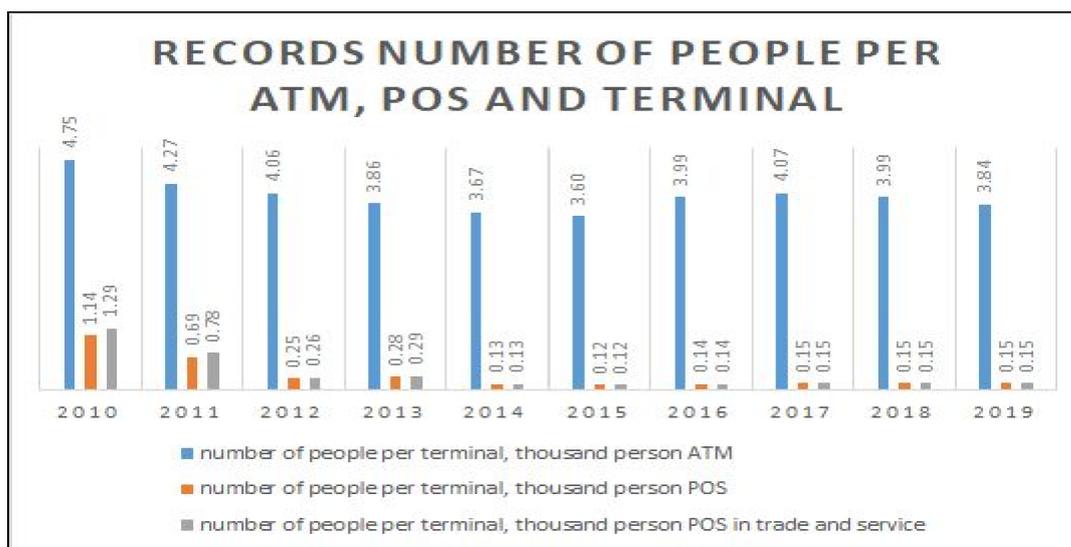


Figure 2: Number of people per ATM, POS and Terminal 6

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p. 55

#### 4.1. Internet usage in Azerbaijan

In the last 10 years, Azerbaijan has enjoyed the high level of (approximately twice) increase in the population which has access to the internet. For the data of the World Bank's statistics, after 2005, Azerbaijan is the leader due to the percentage of internet users in the Southern Caucasus. It can be explained with the enhancement of globalization, the rapid development of technology, and the availability of networks in almost 70-80% of the country. Here, unlike the trend in the data seen until 2018, the trend until 2013 is accompanied by significant changes in the number of internet users. According to the graph, since 2016 there has been a 0.8 percent increase each year. However, some obstacles create a distribution of internet connection problems and tremendously affect the growth of internet usage in Azerbaijan such as the low speed of the internet connection, abuse of personal information, and other problems. If these problems are facilitated, there will be a huge increase in statistics.

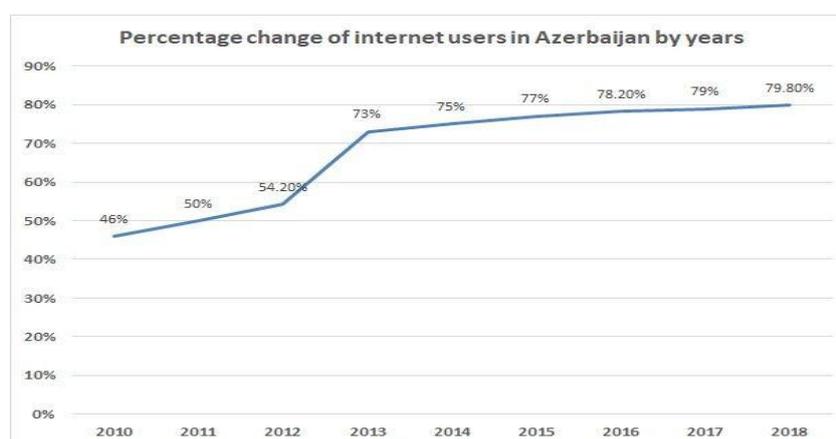


Figure 3. The percentage change in usage level in Azerbaijan between 2010-2018

Source: [https://www.theglobaleconomy.com/Azerbaijan/Internet\\_users/](https://www.theglobaleconomy.com/Azerbaijan/Internet_users/)

#### 4.2. Payment cards usage

In the matter of the availability of non-cash payments, the number of cards issued was analyzed below. The country has tended to have increased payment transactions, particularly non-cash transactions, as the economy and technology development. This concept can be seen graphically in almost every country's data, including Azerbaijan's. However, the economy is experiencing a steady decline in most payment cards from 2014 to 2016. This was the time of the oil crisis and the key reason for the downturn was considered as the bankruptcies and bank shutdowns. After 2016, the upturn trend has been restored and continues with its high level (in 2019, more than 7 mln.).

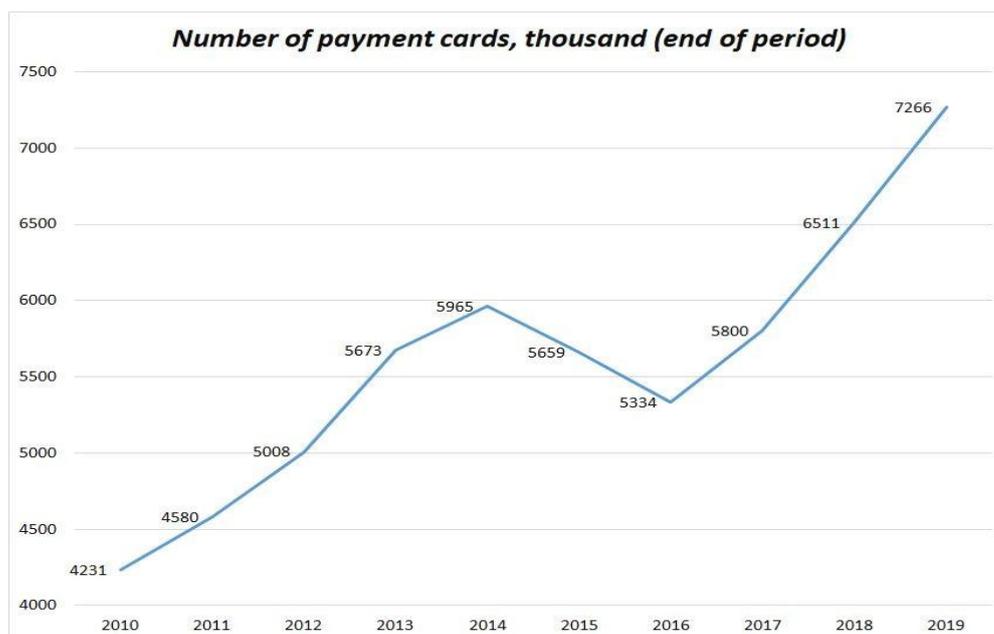


Figure 4. Number of payment cards, thousand (end of period)

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p. 51

#### 4.3. Shares of the types of payment cards in circulation

According to the data of 2019, Azerbaijani residents have 7,266,000 payment cards in circulation. These cards are divided into two main groups: debit and credit cards. Upon a closer look, it can be seen that 10.9% of all the payment cards are credit cards, while the rest are debit cards, 89.1%. In addition, these cards have 3 subgroups: salary cards, social cards, and others. The main part of debit cards is social cards (32.7%), the following one is salary cards (31.9%) and only 24.35% of all cards are other cards. These data show that two-thirds of all cards are salary and social cards which contribute most usage of non-cash transactions. In general, the less usage of credit cards can be connected with the lack of trustworthiness among people.

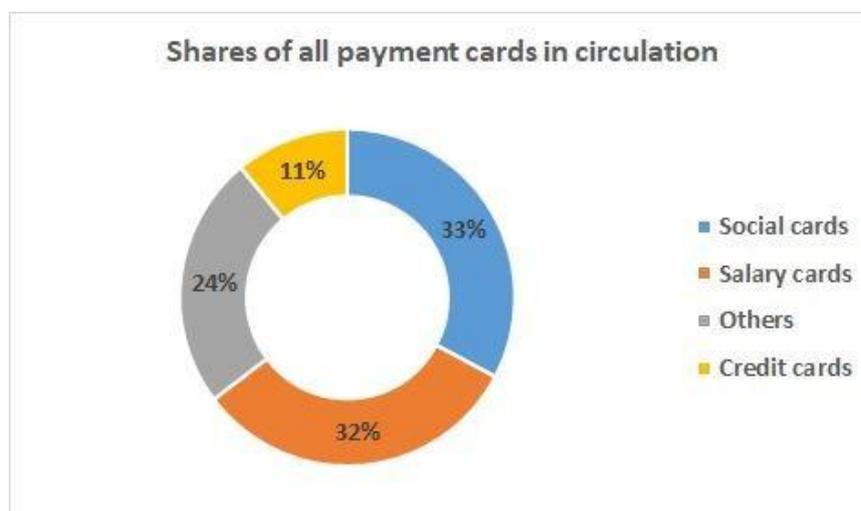


Figure 5. Shares of all payment cards in circulation

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.51

The following graph illustrates fluctuations in the number of transactions via debit and credit cards over an eleven-year period between 2008 and 2019. Over the years, the number of transactions via debit cards and credit cards shift gradually. The number of transactions via debit cards from 2010 to 2016, in particular, raises with approximately the same amount year by year. The graph reveals the steady growth in the number of transactions via debit cards between 2016-2019. Moreover, the substantial increase in the number of transactions via credit cards can be observed since 2016 which reached its peak point in 2019.

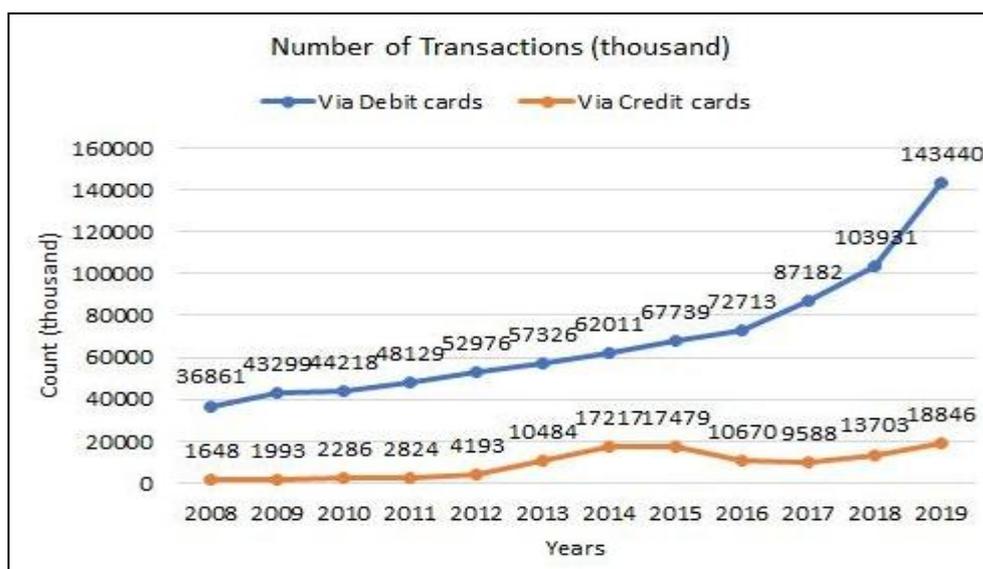


Figure 6. Number of Transactions via debit and credit cards

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.52

Nonetheless, the number of transactions with credit cards is less than debit cards and sharp changes are found between 2012 to 2019. A slight rise from 2010 to 2012 was placed by a sudden growth in the number of transactions via debit cards and the amount of the transactions via credit cards considerably rises from 1.067 mln. manats to 2.347 mln. manats over two years. The number of transactions with credit cards has diminished between 2014-2017 due to an increase in import customs duty, the devaluation of the local currency, and economic crisis. In 2018, the number of transactions rose to 1940. Nevertheless, there is a 13.5 percent decline in the last year.

#### 4.4. Number of non-cash transactions via ATM and Post-Terminals

There was a steady increase from 2010 to 2015 in several withdrawals via ATM. Beginning from 2015 as a result of the closure of 14 banks in the country due to decreased credibility and financial crisis caused to decrease in the number of withdrawals but an increase in the number of withdrawals via ATM. Furthermore, with the help of governmental innovative supports, the number of transactions via post-terminal dramatically enhanced roughly twice from 2018 to 2019. However, starting from 2017 to 2019, the number of withdrawals via ATM slightly is mitigating an average of 220,000 every year. The statistical result shows that online banking systems and e-commerce encourage non-cash payments year by year in Azerbaijan.



Figure 7. Volume of transactions via debit and credit cards (with mln. manat)

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.52

4.5. The volume of non-cash transactions via POS and ATM

The bar graph displays the amount of non-cash payments and the number of payments via POS and ATMs. If we look more closely at the figures, we can see a significant increase compared to the previous years in the volume of payments in 2013. In 2014, due to the declines in oil prices and devaluation in 2015, the economy has suffered a lot, and this led to the stagnation in the volume of transactions via ATM and Post-terminals. According to the Law of the Republic of Azerbaijan on Non-cash settlements of December 16, 2016, it stimulated the number of payments and amounts of payments via POS and ATMs.



Figure 8. Number of non-cash transactions via ATM and POS

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.51

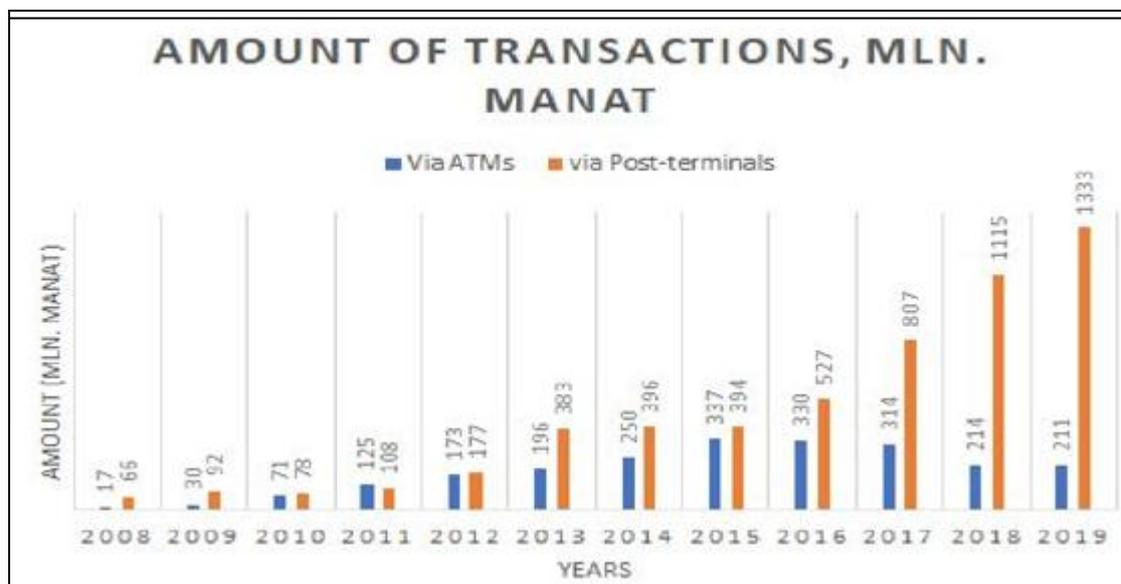


Figure 9. Amount of non-cash transactions via ATM and POS

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p.51

The structure of broad money of CBAR (for December 2019) emphasizes some points:

1. 79.3% of the money is in active circulation (is either cash outside banks or demand deposits in manat).

2. Time deposits in manat own the least share of all money supply with 9.8%.
3. 36.8% of the money is the deposits in foreign currency. Although in 3 years, these deposits have lost their share close to 20%, it is still the major part of all money supply. This means, after the economic crisis, the effective monetary policy helped manat to recover its credibility with respect to the other currencies in the domestic market.

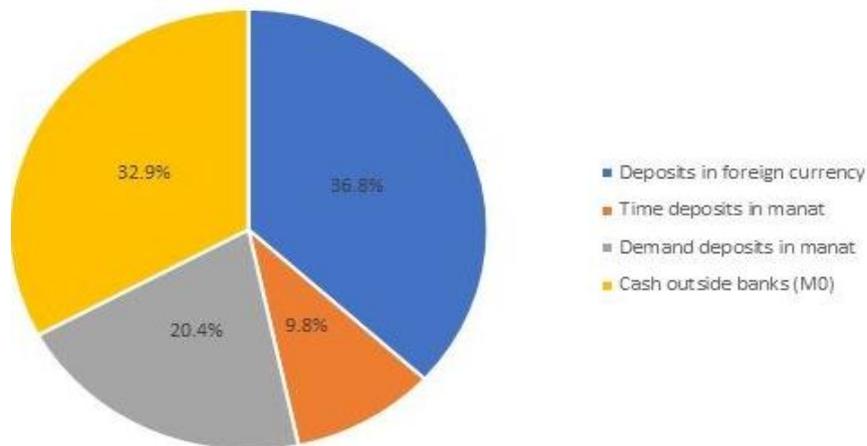


Figure 11. Structure of Broad Money (mln. manat) – 01/01/2020

Source: Statistical Bulletin (December 2019). Central Bank of Azerbaijan Republic, p. 60

## 5. Suggestions

The report finds that Azerbaijan's prospects are relatively weak in its current position. Major areas of weakness require further government investigation and remedial action. Suggestions discussed include:

### 1) Identify approaches to expanding interests among organizations

Most electronic payments cost only about one-third to one-half as much as a paper-based non-cash payment and it is clearly understood that if it is transferred to electronics, the cost of a payment system could be significantly reduced. Therefore, according to their differential service costs, the bank should provide payment services, so users can choose the payment instrument with the lowest net price/nonprice cost. If banks are able to move their account holders from using paper checks to using electronic debit cards, their costs will be reduced, revenue will be increased, and profitability will, therefore, be increased. Research studies have also shown that people have different preferences when using different types of payment tools. Among those who use direct deposit, for example, ATM, debit card use is more prevalent than among others. The role of the bank here is to facilitate and promote the efficiency of the overall payment system by continuing to offer currency as one of several payment technologies. Alternative payment technologies can be provided freely, allowing users to choose among those technologies that compete.

Focus group companies expressed that some of their smaller customers are not sufficiently sophisticated for electronic payments and would most likely fail to comply with any electronic payment requests. Electronic payments are more likely to be used by larger companies. In addition, they can choose any payment mechanism they believe is acceptable in the real world, which depends heavily on the nature of their business. Businesses should look deeply into transaction characteristics that could affect an online system's requirements. It can be assumed that government intervention is highly appreciated in the implementation of an electronic interface that will enable households and businesses to make payments to either government or other organizations. On the other hand, indications of the likely emergence of a number of new payment technologies raise some questions about the need for standardization. A proper standardization can facilitate to extend the participation of additional businesses to speculate in electronic payments.

### 2) Reduce the utilization of customary payment strategies

Traditional payments, where coins and notes are replaced by efficient electronic payments initiated by different types of plastic cards by the clumsy and costly way to handle them. This is the twenty-first century's tempting prospect. Both paper-based payment costs and prices are higher than their electronic counterparts. Traditional payment is not the preferred method of payment, especially for higher-value transactions as the use of currency involves costs of handling, storage, and security that may not arise with other methods to the same extent. There will, of course, be some substitution, but the nature and extent of this substitution will depend on a number of factors. People will tend to use payment technologies that

are cheaper, more convenient, and less risky than the alternatives available. Instead of having to use a variety of methods to meet different needs, many will probably prefer methods that can be used for multiple purposes. The level of retailers, merchants, and other suppliers accepting particular payments will have a significant influence on taking on new approaches.

### 3) *Review the position of issuers in preventing safety threats*

Electronic payment issuers will need to be very careful to ensure that the risk of counterfeiting is minimized, and they have to be very vigilant in monitoring their systems and operations so that when fraud occurs, it can be detected quickly. Issuers should emphasize that security encryption assurance is well-written and prominently displayed. Improvements should be made at least every month on every sophisticated security system to prevent hackers from stealing both money and personal information. In order to maintain security and privacy, greater priority must be given to enhancing the encryption mechanism. Issuers must obtain private data from the customers involved immediately. Issuers can use all the mechanisms accessible on the market for fraud avoidance, such as government important cryptosystems and electronic signatures. In order to check the method, at least one electronic signature must be developed during payment. Digital signatures can be used to ensure information integrity as well as the originator's identification. On the other side, by preventing exposing any of a consumer's identity in the payment system, privacy can be ensured.

## 6. Conclusions

We find that government laws and the structure of the financial sector influence the utilization of payment instruments. The government laws will work for the use of non-cash payment instruments; however, there is no centralized agreement on what laws ought to be in the situation these days. The bigger concentration of the financial sector, a lot of seemingly there's a centralized payment infrastructure in place that facilitates the growth of non-cash payment instruments. Over the ongoing years, prominence of card payment has developed in Azerbaijan at a phenomenal rate. In the meantime, cards have turned into the most utilized cashless payment instruments in the world as far as the number of exchanges. The point of the introduced research was to examine this marvel by looking for determinants of card utilization including the estimation of exchanges and the number of cards held by the residents. The outcomes were mostly in line with the literature.

The basic components required for the reception and usage of the cashless economy are not yet accessible in the satisfactory amount. It was likewise found that the appropriation of the cashless economy will be accomplishing monetary improvement furthermore, strength objectives, working it is a system for optimizing development in the countries' money related part. In this way, in light of the increasing impact of the advantages many creating economies are receiving the cashless methodology and are going computerized. This is a huge task and requires the foundation to be vigorous and have a span in the whole purchaser base just as the brokers, what's more, specialists. It is up to the overseeing collections of the nations to give a push to banks and telecom organizations to improve the versatile and net financial biological system in order to give a consistent end answer for clients just as brokers (Sparrow, 2016). The upside of going cashless is past creative energy, to the residents as well as the nation too.

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- [http://cbc.az/en/en/v\\_story/non-cash-payments-in-azerbaijan](http://cbc.az/en/en/v_story/non-cash-payments-in-azerbaijan) [https://www.theglobaleconomy.com/Azerbaijan/Internet\\_users/](https://www.theglobaleconomy.com/Azerbaijan/Internet_users/)