Global Journal of Management and Business Research: B
Economics and Commerce
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Impact of Demonetization 2016 on Venezuelan Economy

By Alberto José Hurtado Briceño & Sadcidi Zerpa de Hurtado
University of the Andes

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GJMBR-B Classification: JEL Code: 010

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I. Introduction

Demonetization corresponds to a measure taken by governments to reduce the problems generated by the falsification of money, the smuggling of coins and notes and the movement of funds obtained from illegal economic activities (Lahiri, 2016; Ramdurg and Basavaraj, 2016; Rani, 2016; Kotnal, 2017). With short-term results, demonetization is used to legalize funds from the underground economy as well as to identify the size of the formal sector of the economy. It is an economic policy decision that requires a joint effort between government authorities and the central bank to guarantee the deposit and exchange of demonetized money, without harming the purchasing power of its owners (Hurtado and Zerpa, 2019a).

In this sense, is a measure of monetary policy where the circulation of all or part of the pieces of the monetary cone is declared illegal. It usually occurs when there is an economic, political and social crisis that leads to a change of national currency by replacing the old monetary unit with a new one; front high levels of hyperinflation that generate recurrent updates of the monetary cone through the abandonment of the pieces of smaller denomination and its replacement by new notes of greater nominal value; the falsification and money laundering processes; the excessive storage of foreign currencies and national currency in cash; and the recurrent acts of corruption (Hurtado and Zerpa, 2018).

In Venezuela, due to widespread use of price controls, the appearance of parallel markets and the excessive implementation of subsidies, transfers and wage adjustments by the public sector, the Venezuelan economy began to be more informal. This increased the importance of cash, conditioned the decision making of the economic agents and hindered the achievement of the objectives of the economic policy implemented by the Venezuelan government.

Thus, on December 11, 2016, the government of President Nicolas Maduro announced the process of demonetization of the 100 bolívares note, with the purpose of achieving economic, monetary and price stability, eliminating the smuggling of banknotes, assuring the population the enjoyment of their economic rights and access to merchandise, achieving a higher level of efficiency and quality in government management, and eliminating the laundering of bolívares (Hurtado and Zerpa, 2019a, 2019b). In a context of stagnation of productive activity, generalization of parallel markets, shortage of cash and high inflation, this demonetization was a monetary shock measure with economic, political and social implications for the entire country.

In this sense, the article aims to analyzed impact of demonetization 2016 on Venezuelan economy. For this, the proposed objectives set are explored. In the next section the origin of the measure is presented, and the effects of the demonetization are identified. The results obtained by this government policy are presented below and, in the last section, the conclusions are identified.

II. Origin of Demonetization in Venezuela

On December 11, 2016, the Venezuelan government announced the demonetization of the 100

Author α σ: Economic Studies Group on Asia (GEEA), University of the Andes, Venezuela. e-mails: ajhurtado@ula.ve, zerpasad@ula.ve

bolívares bills issued by the Central Bank of Venezuela (BCV, by its initials in Spanish). To this end, it established that, within 72 hours following the publication of Decree No. 2,589, of the state of exception and economic emergency, in the Extraordinary Official Gazette No. 6,275 of the Bolivarian Republic of Venezuela, the highest denomination note of the Venezuelan economy was declared illegal to be used in the exchange for goods and services. In this way, it represented a measure taken without prior notice, which was made known insisting on the need to address to the country's monetary problems.

As complementary measures to the announcement of the demonetization, it was established that the 100 bolívares banknotes would have a validity of 72 hours to be deposited or exchanged for legal tender banknotes in the offices of banks owned by the public sector. Demonetized banknotes that were not exchanged or deposited within the established period of time were declared without liberating power, that is, without the capacity to be used as a means of payment, but their owners had 10 additional banking days to exchange them at the ticket offices set up for this purpose by the BCV. The one hundred bolívares bills presented to the BCV and public banks were exchanged for their entire nominal value in pieces of lesser denomination of the current monetary cone. The BCV was in charge of the application and execution of the demonetization measure. In this sense, the Venezuelan issuing entity had assumed the commitment to put into circulation as of December 15 a new family of paper money to expand the current monetary cone, which included the issuance of five new bills of greater denomination: 500, 1,000, 2,000, 5,000, 10,000 and 20,000 bolívares. And the country's land, air and maritime borders were closed during the period given for the circulation of the 100 bolívares note, with the intention of preventing the return of the funds in that denomination obtained from illegal activities to Venezuela.

III. Objectives of Demonetization in Venezuela

Demonetization was presented as a policy capable of achieving a multiplicity of objectives. In this order, the Venezuelan government and the BCV set themselves the main objectives: a) Guarantee and defend economic stability, ensuring the monetary and price stability of the Venezuelan economy; b) Eliminate the smuggling of banknotes, the economic war, the exchange distortion and the induced inflation that sectors of the population were using to destabilize the Venezuelan financial system and undermine the quality of life of the inhabitants of this country; c) Ensure that citizens enjoy economic rights and free access to goods and services, as well as the progressive satisfaction of individual and collective needs; d) Achieve greater efficiency and quality in government management aimed at restructuring the Venezuelan economy; and e) Eliminate the laundering of bolívares for illegal activities from the border with Colombia (Bolivarian Republic of Venezuela, 2016; Hurtado and Zerpa, 2019b).

In relation to these objectives, since the announcement of the demonetization of the 100 bolívares note, the Venezuelan authorities insisted on demonstrating the negative effects of the smuggling of coins and goods, as well as counterfeiting and money laundering at the borders between Colombia and Brazil with Venezuela. In this regard, the demonetization sought to eliminate the nominal value of all 100 bolívares bills located outside the country; generate a drop in the demand for cash at the border in order to recover the purchasing power of the bolívar; and eliminate the formation of the parallel bolívar-dollar exchange rate.

IV. Effects of Demonetization in Venezuela

Given the speed of the measure, the short, medium and long term effects of the demonetization of the 100 bolívares note were not long in coming in the Venezuelan economy. In this sense, it highlights the impact of politics on the daily dynamics of economic agents, causing changes in the consumption, production and savings decisions of Venezuelans. And the change in the government's position stands out due to the initial results of the measure that allowed to solve the liquidity difficulties of the Venezuelan public sector and to reduce the amount of bolívares destined to illegal activities.

The main effect of the demonetization policy was the shortage of cash as a consequence of the outflow of 77% of the circulating money in the country. This situation caused consumers to advance the purchase of goods and services in order to get rid of the 100 bolívares banknotes, which in turn generated two effects: the reduction of savings of unbanked economic agents and the increase in inflationary pressures existing in the economy. The decisions of production and commercialization of goods in the country were modified due to: 1) Lack of cash that raised the costs of the productive activities highly dependent on this means of payment and 2) High uncertainty about what to do with the demonetized notes received in the commercial exchange. In this sense, many commercial establishments remained closed due to the unwillingness of their owners to accept 100 bolívares bills during the duration of the measure.

A stage began, which still continues in the country, of price discrimination of raw materials, inputs and goods based on the difference in the payment system to be used, resulting in the identification of at least two prices per product, one in cash and another using a debit card. In this regard, the price of products was considerably lower if they were paid in cash and with banknotes other than 100 bolívares compared to the price paid using demonetized notes, debit cards, credit cards or electronic transfers. In this way, demonetization made it difficult to identify the true exchange value of goods in the country, undermining the bases of the Venezuelan economy's pricing system and encouraging the upward trend in inflation.

The deposits of public and private banks in the Venezuelan banking system increased as a result of the government's decision to give the banks belonging to the Venezuelan government the exclusive right to exchange and deposit 100 bolívares notes, a decision that was later extended to private banks. The limited installed capacity of banking institutions to absorb the high demand for their services led them to restrict deposits per client, which generated the appearance of managers to deposit and exchange demonetized banknotes in the formal banking system. The proximity of the expiration of the 72-hour term given by the government to demonetize the highest denomination banknote in the economy provoked implausible behavior on the part of economic agents, among which they are: a) People who charged commissions to deposit funds in banks in an environment where all customers needed to go to the bank and, therefore, the costs of this activity were high; b) Savers who threw their notes into the air, throwing away their savings, due to the impossibility of depositing all their resources in banking institutions; c) People who decided to bury their resources, putting under the ground boxes with notes of 100, to avoid participating in the vortex of stress, uncertainty and speculation that became the day of demonetization; and d) Fall in the nominal value of the demonetized banknote, in this way, the funds expressed in 100 bolívares notes were exchanged up to 40% less than their nominal value for coins and bills of other denominations in the informal financial system, that is to say, during the exchange of a 100 bolívares notes only 60 bolívares were given in paper currency of other denominations.

In terms of the dynamics of productive activity, both the agricultural sector and the services and manufacturing sectors faced changes in the prices of their raw materials and inputs depending on the nature of the payment system used: in cash or with cards. They also evidenced the paralysis of their activities during December 12, 13, 14 and 15, 2016 as a consequence of the uncertainty about the legality of receiving 100 bolívares banknotes and the uses to be given to the funds collected in that denomination.

Another effect of demonetization was the reduction in consumption, due to the shortage of cash sectors of the economy such as transport, marketing of agricultural goods and food, dependent on payment with coins and banknotes, saw a reduction in sales in the first days of the exit of circulation of 100 notes, a situation that was reversed as the use of alternative payment systems became widespread. In that order, the use of electronic payment systems, debit cards, credit cards, checks and other options for the purchase of products without the need for cash increased.

In the face of the liquidity shock caused by the government measure, there were also protests in the offices of banking institutions and the regional headquarters of the BCV, looting of businesses and trades, vandalism and a shortage of basic necessities due to the fear of their commercialization using demonetized banknotes. Due to the weak banking infrastructure and the continuous telecommunications failures in the country, the installed capacity of the public and private banks was exceeded. Even working until midnight and with clients in front of the banking entities, they were unable to attend all the deposit requests, which generated discomfort and confusion among the population. In the communities without banking entities, small cities and towns of the country, where all commercial activities were carried out in cash, there was a paralysis of productive activity and commercial exchange due to the fact that economic agents could not deposit their funds in demonetized banknotes or cancel their commitments with suppliers. With respect to the impact on the commercialization and distribution of products, from hours before the deadline for the circulation of the 100 note to Friday, December 16 and Saturday, December 17, 2016, looting was recorded throughout the national territory, highlighting the events that occurred in the states of Sucre, Delta Amacuro, Anzoátegui, Trujillo, Mérida, Barinas, Apure, Táchira, Zulia and Bolívar (Hurtado and Zerpa, 2019a).

As a consequence of not being able to deposit all of the paper money, coupled with the inconvenience and anguish of losing their funds or falling into the hands of informal financial operators, the population protested and then attacked the commercial sector. These acts caused the paralysis of the commercial sector, closure of establishments, losses to their owners and unemployment. Similarly, protests and road closures occurred in the towns closest to the border with Colombia and Brazil, although within the framework of complementary measures to demonetization, it was stipulated that the border crossings be closed to prevent the entry of funds in 100 notes from abroad, the low level of bancarization of the border populations, the inability of the banks to serve all the population that intended to deposit their funds and the delay in the circulation of the new banknotes generated tension and protests in the border populations causing the closure of the border during and after the measure was executed. In this context, Oliveros and Oliveros (2016) consider that the untimely withdrawal of the highest denomination note caused: 1) Greater control of available money, 2) Collapse of the payment system, 3) Incapacity of the BCV to, in such a short term, remove the 100 bolívar notes from circulation and incorporate the new pieces of the monetary cone into the economy, and 4) Diverted attention from the country's problems.

The measure also led to the seizure abroad of more funds in banknotes of 100. Because the largest Venezuelan denomination paper currency is printed on high-quality paper and its face value is negligible in the face of the country's inflationary reality, it is attractive for counterfeiting banknotes, as well as for mobilizing resources from drug trafficking, illegal currency exchange and other underground economic activities. In this sense, since 2015 there have been reports of the seizure of large quantities of 100 bolívares banknotes outside the national territory, highlighting: a) Detention of persons of various nationalities trying to obtain abroad large quantities of bolívares bills; b) Seizure, on January 6, 2016, of 140,000 of 100 bolívares in the border Brazil-Venezuela; c) Seizure of more than 30 million bolívares between February and April 2016 by Brazilian authorities in Roraima; and d) Capture, on July 1, 2016, of two Ukrainian and Russian citizens in Manaos trying to airlift 7.3 million in 100 bolívares notes (Pimentel, 2016). After the demonetization has been implemented, there are reports of Venezuelan banknotes traffic in at least three countries: Colombia, Brazil and Paraguay (Hurtado and Zerpa, 2019a). These operations account for the resources expressed in bolívares in the hands of foreign economic agents and the alternative uses of Venezuelan paper money in the illegal economy.

Similarly, the Venezuelan government managed to resolve the liquidity difficulties of its owned banks and after the 72-hour demonetization deadline, decided to extend the measure for two more weeks until January 2, 2017, in order to collect paper money. The impact caused by the extension was not as expected, there was still illegal money in circulation, queues continued at banking institutions to deposit or exchange the 100 banknote, economic agents continued to be uncertain about what to do with the demonetized note, all this in an environment of slowness in the circulation of the new notes and in the adaptation of banking services to the new pieces of the monetary cone, which together with the shortage of cash and high inflation led the authorities to give up to 13 extensions to the date for the withdrawal of circulation of the 100 bolívar note (see Table 1), extending the demonetization process for more than one year and eight months until the execution of the monetary reconversion measure or reexpression of the country's monetary system unit scheduled for June 4, 2018, a measure that was later postponed to August 4 of the same year. Due to the deepening of the country's macroeconomic problems, the financial difficulties of the national executive and the limitations for the import of all the pieces of the new monetary cone, the government postponed the start date of the monetary reconversion to August 20, establishing new guidelines for its implementation.

In this sense, the incomplete demonetization of the 100 note caused widespread discontent among the population due to the high costs that people had to assume to maintain and use all the funds accumulated in the illegally decreed note; it caused changes in the consumption, production and investment decisions of Venezuelans who had to migrate to payment systems that allow cashless transactions; it did not eliminate the incentives for extracting the 100 bolívares banknotes, as well as the new larger denomination notes, from the national territory to the border; it caused a change in the confidence of Venezuelans in the local currency and in their perception of the role of the authorities and decisions taken by the BCV. This marked the beginning of a period of high uncertainty in the country's economic activities and deterioration in the indicators of the population's well-being and quality of life.

Global Journal of Management and Business Research (B) Volume XIX Issue II Version I Year 2019

Table 1: Schedule of extensions to the 100 bolívar banknote.

Extension	New Date	Decree/ Official Gazette
1st	January 2, 2017	Decree No. 2,610 in Extraordinary Official Gazette No. 6,278 of December 17, 2016
2nd	January 20, 2017	Decree No. 2,646 in Official Gazette No. 41,063 of December 29, 2016
3rd	February 20, 2017	Decree No. 2,671 in Official Gazette No. 41.075 of January 16, 2017
4th	March 20, 2017	Decree N ° 2,722 in Official Gazette N ° 41.098 of February 17, 2017
5th	April 20, 2017	Decree No. 2,756 in Official Gazette No. 41,116 of March 17, 2017
6th	May 20, 2017	Decree No. 2,819 in Official Gazette No. 41,133 of April 18, 2017
7th	July 20, 2017	Decree No. 2,875 in Official Gazette No. 41,154 of May 19, 2017
8th	September 20, 2017	Decree No. 2,993 in Official Gazette No. 41.196 of July 19, 2017
9th	November 20, 2017	Decree No. 3,086 in Official Gazette No. 41,240 of September 20, 2017
10th	January 20, 2018	Decree N ° 3.169 in Official Gazette N ° 41.282 of November 20, 2017
11th	March 20, 2018	Decree No. 3,249 in Official Gazette No. 41,323 of January 18, 2018
12th	May 20, 2018	Decree No. 3,328 in Official Gazette No. 41,364 of March 20, 2018
13th	Until the circulation of the pieces of the current monetary cone and its replacement by the coins and notes of the sovereign bolívar	Decree No. 3,430 in Official Gazette No. 41,399 of May 17, 2018

Source: Prepared by the authors.

V. Impact of Demonetization on Venezuelan Economy

At present there are no official documents available where the Venezuelan government and the BCV give an account of the results obtained, in this regard there are only press releases and journalistic reviews describing the words of the President of the Republic and officials of the issuing entity. In this sense, the following section delves into the impact of the implemented monetary policy presenting, on the one hand, the official description of the results obtained and, on the other hand, analyzing the changes in the macroeconomic variables before, during and after the measure that took the 100 bolívar note out of circulation.

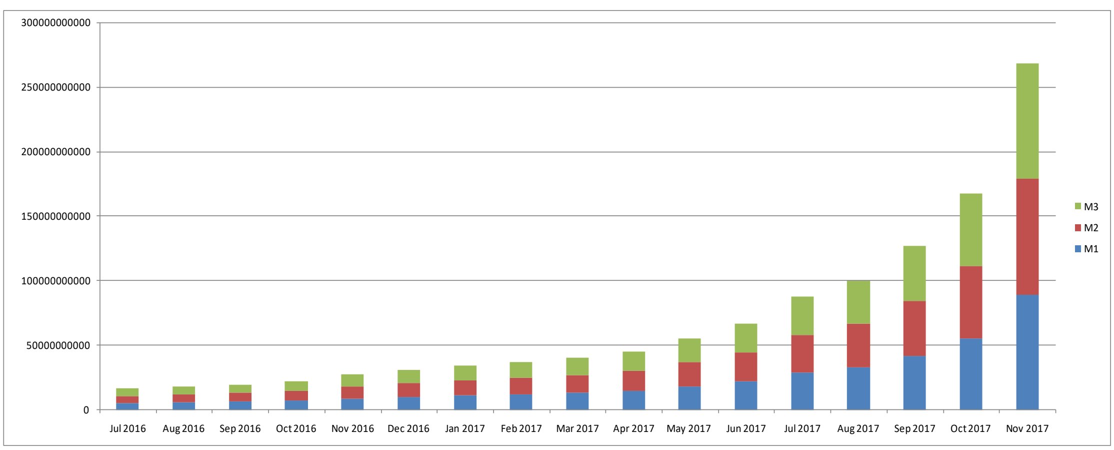
The first result of the demonetization was to remove from circulation 4.3 billion 100 bolívar banknotes, with a value of 430 billion bolívares. In declarations by the President of the Republic given in the framework of the presentation of the balance of the measure and the first extension of the validity of the 100 bolívar note, the amount collected allowed the national banking system to go from having an availability of 5% of the pieces of the demonetized note before the measure to accumulate more than 70% of the units of that note in the three days following the presentation of

Global Journal of Management and Business Research (B) Volume XIX Issue II Version I Year 2019

the decree. The impossibility of timely collecting the remaining 30% of banknotes in the hands of economic agents who could not access the banking system to deposit or exchange their funds, as well as the insufficient entry into circulation of the new banknotes as part of the expansion of the monetary cone led the government to extend for the first time the date for withdrawal of circulation of the 100 bolívar banknote.

The government's achievement thus presented made it possible to correct the liquidity problems of public and private banks, which after extending the deadline for withdrawal of the demonetized banknote were able to use the 100 bolívar notes to cover their commitments to their customers. The adaptation of the ATMs to the new pieces of the monetary cone and the circulation of the new banknotes did not correspond to the urgency of the demonetization measure, deepening the effects of the cash shortage on the daily dynamics of Venezuelans.

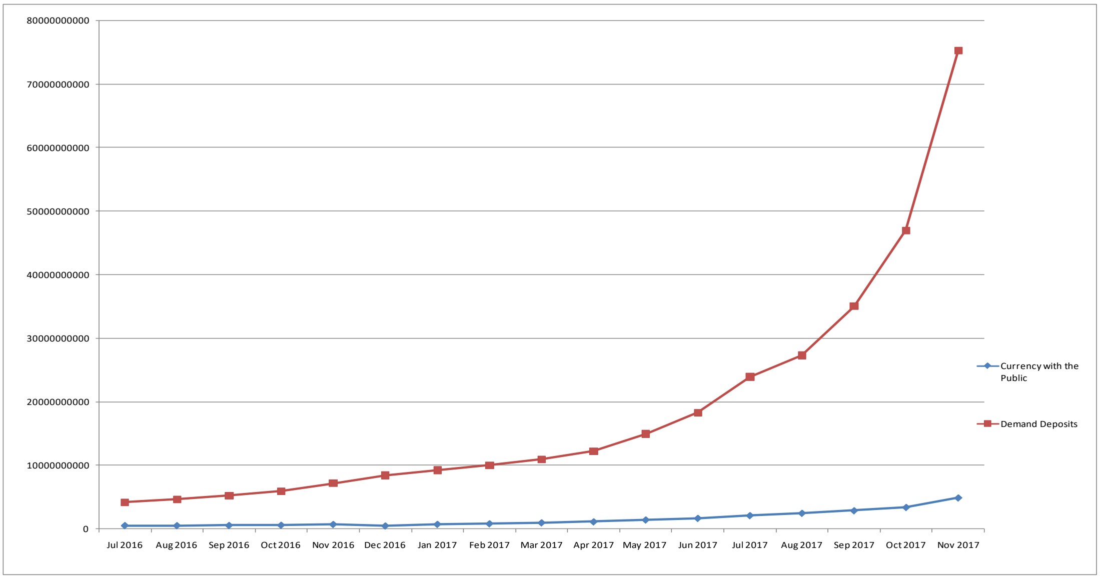
As a result of the demonetization measure, two effects were achieved in the evolution of the monetary aggregates: firstly, its growth speed slowed down from December 2016 to February 2017 and, secondly, it began a phase of expansion of the different financial assets circulating in the national economy until reaching 25.38% monthly between March and November 2017. Both M1 and M2 and M3 showed an increase of 22.74% between October and November 2016, a rate considered high if one takes into account that the average of the previous months was 10%, a situation reached due to measures to stimulate consumption, increase wages and salaries, advance payment of bonuses at the end of the year (bonuses and profits), as well as the increase in transfers from the public sector via social missions (Hurtado and Zerpa, 2016a, 2016b). In December 2016 cash in public hands, demand deposits and transferable savings deposits increased 13.28% and in January 2017 grew 10.61%, that tendency to decrease in the rate of growth of M1 continued until February 2017 when it reached 8.36%. Starting in March 2017 all monetary aggregates grew at rates above 10%, reaching levels above 60% between October and November 2017. As Figure 1 shows, Venezuela's monetary aggregates did not evolve in a stable manner during and after the demonetization process, mainly because of the government's interest in stimulating the economy through expansionary fiscal policy. This strategy increased the demand for coins and notes, and made the government put more money in circulation, a situation that in a context of stagnant productive activity and high prices accelerated the spiral of galloping inflation that Venezuela lived for years.



Source: BCV (several years).

Figure 1: Evolution of monetary aggregates Venezuela

In this context, the gap between the demand for deposits and the demand for coins and notes by the Venezuelan population widened. Until October 2016 the demand for deposits was 4,302 million bolívares on average per month, higher than the demand for cash, from November of that year the gap grew above 6,000 million bolívares, and after the demonetization measure, in view of the uncertainty about what to do with the funds in notes of 100, the demand for deposits in the Venezuelan economy exceeded, on average every month between December 2016 and November 2017, 21,417 million bolívares to the balances that the population maintained in coins and notes. This implies the preference of Venezuelans to maintain their funds in the banking system, the immediate response of the population to the scenario of cash shortages caused by the outflow of the 100 bolívar note, and the mechanism preferred by the government to maintain the expansion of public spending. While coins and bills in the hands of the public only represented a monthly average of 1,817 million bolívares between November 2016 and November 2017, funds in deposits of the population reached a monthly average of 23,099 million bolívares in the same period (see Figure 2). This result shows that Venezuela is a country of low dependence on cash and that demonetization only increased the gap between the funds that the population maintains in cash and as deposits in banks.



Source: BCV (several years).

Figure 2: Evolution of cash in the hands of the public and demand for deposits Venezuela

As for the payment systems used in the economy, during the month of September 2016, credit cards operating under the Visa, Mastercard, American Express and Diners Club franchises, with national and international coverage were accepted at 432,845 points of sale, located in 349,229 affiliated businesses in the country, and 38,680 additional establishments only received the American Express card from the Banco Occidental de Descuento. Debit cards issued by public and private banks for national use only were received at 432,728 point-of-sale terminals, installed at 349,111 affiliated companies and 9,917 ATMs (Bolivarian Republic of Venezuela, 2016). After demonetization began and despite the liquidity shock generated, both the number of point of sale terminals for credit and debit cards and the number of ATMs distributed throughout the country decreased as a result of the low availability of point of sale terminal equipment in the country's main banks, limitations on the sector's access to foreign exchange to guarantee the purchase of this technology abroad, the telecommunications system crisis that limits the use of telephony and data services throughout the national territory, and disincentives to investment in the banking system, all of which prevented the high demand for this type of services from being met. In January 2017 credit cards were used through 431,813 points of sale located in 336,634 companies, debit cards were received in 431,813 point of sale terminals installed in 336,634 affiliated businesses, and 9,767 operating ATMs were reported (Bolivarian Republic of Venezuela, 2018). That is, 1,032 points of sale and 12,595 fewer companies to provide credit card service, 915 points of sale and 12,477 affiliated companies that ceased to provide debit card service, and 150 ATMs ceased to operate compared to September 2016. This influenced the evolution of the demand for products, brought about the appearance of queues for the use of available points of sale, and became an incentive for price differentiation, as outlets with points of sale established higher prices for their products due to the opportunity they gave their customers to pay with debit or credit cards.

Thus, the shortage of cash, the high inflation and the reduced number of alternative payment systems led the Venezuelan consumer to make greater use of point-of-sale terminals, equipment that saw its operations grow by 41% between June 2016 and June 2017, where 218,561,775 and 308,172,103 operations, respectively. Within this framework, debit cards were used more than credit cards; the former went from 185,777,509 transactions in June 2016 to 261,946,288 in June 2017; and the latter grew from 32,784,266 transactions in June 2016 to 46,225.815 in June 2017 (SUDEBAN, 2017), which demonstrates the population's preference for cash payment instead of debt, the use of debit cards as a substitute for cash, and traders' predilection for the immediate transfer of funds to avoid the loss of purchasing power of resources as a result of inflation.

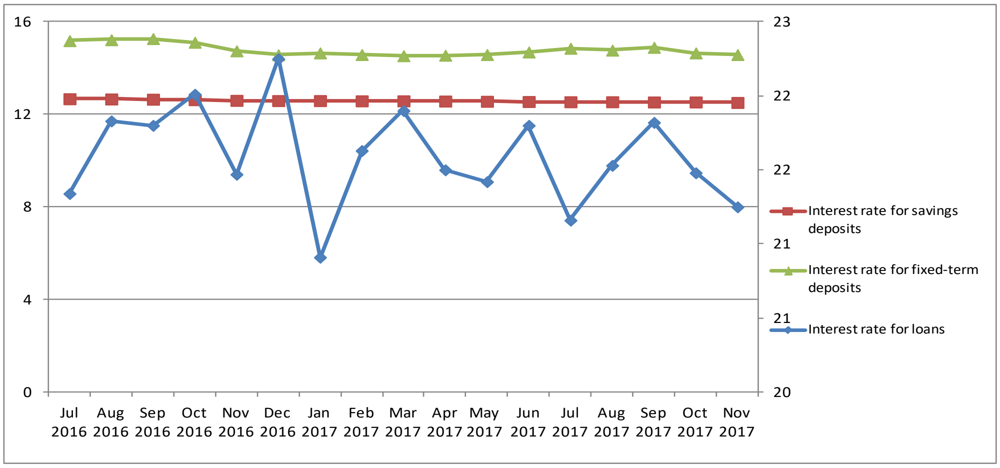
Despite the demonetization measure, the 100 note maintained its preponderance in the Venezuelan economy, due to the increase in its issuance and the increase in its role within the cash in circulation. Between 2015 and 2016 the number of 100 banknotes increased by 116.1%, while between 2016 and 2017 it increased by 35.9%, at a time when the amount of money in circulation grew by 101.5% and 37%, respectively, during each period (see Table 2). In this context, by 2015 the 100 banknote represented 71.07% of the money in circulation, while during 2016, despite the demonetization, this paper increased to 76.19%. With the exception of the 50 bolívar note, all other pieces of the monetary cone in Venezuela have a marginal weight in the distribution of banknotes in the economy. This is a consequence of high inflation, the preference of the national executive for the issuance of the highest denomination notes as a mechanism to facilitate the population's access to funds allocated via transfers, the need for economic agents to reduce their transaction costs through the use of 50 and 100 bolívar notes, the high cost to the population of using the lowest denomination coins and notes, and the high demand for high denomination pieces of the monetary cone to carry out transactions in parallel markets for goods and services. In 2017 the expansion of the monetary cone materializes, bringing with it seven new bills of greater denomination and generates a new distribution in the paper of each piece of the monetary cone. The 100 bolívar note stands out as the piece of greatest circulation representing 22.05% of the cash, followed by the new 10,000, 100,000 and 5,000 bolívar banknotes that represented 14.53%, 14.35%, and 12.25%, respectively during that year. These results show that the demonetization measure did not manage to take the 100 note out of circulation, nor did it diminish its importance in the economy.

Table 2: Distribution of banknotes in circulation Venezuela

Banknotes	2015	2016	2017	2015	2016	2017
2	16,082,594.81	21,196,621.04	20,692,687.97	0.44	0.29	0.06
5	41,574,210.47	47,402,355.54	53,037,956.64	1.13	0.64	0.15
10	76,400,464.54	92,100,172.94	119,665,678.40	2.08	1.24	0.34
20	175,259,308.48	207,584,572.39	260,915,950.37	4.77	2.81	0.75
50	752,578,789.10	1,393,046,563.77	1,904,132,134.17	20.50	18.83	5.48
100	2,608,908,597.03	5,637,112,332.40	7,659,511,485.10	71.07	76.19	22.05
500	-	-	1,687,094,977.50	-	-	4.86
1,000	-	-	3,277,562,505.00	-	-	9.43
2,000	-	-	1,223,827,080.00	-	-	3.52
5,000	-	-	4,257,359,820.00	-	-	12.26
10,000	-	-	5,047,640,350.00	-	-	14.53
20,000	-	-	4,243,474,980.00	-	-	12.22
100,000	-	-	4,984,812,300.00	-	-	14.35
Total	3,670,803,964.44	7,398,442,618.09	34,739,727,905.16	100	100	100

Source: BCV (several years).

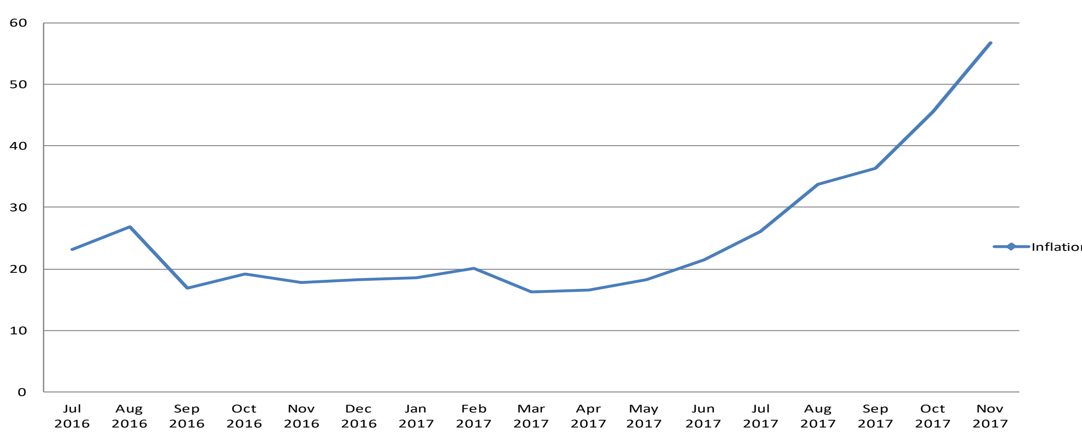
Another result of the demonetization was the weakening of interest rates received by bank customers for their savings and fixed-term deposits, together with the abrupt increase in the interest rate charged by banks for lending. Local money market passive interest rates, what people receive for depositing their resources in banks, have been aligned to a downward bias since December 2016 as a result of the management of the BCV and the demonetization measure of the 100 note. Thus, between July and November 2016 the banks paid for funds in savings deposits and fixed-term deposits, on average, 12.64% and 15.10% respectively, while during the execution of the demonetization measure only paid 12.59% and 14.57% (December 2016), this trend was maintained during 2017 for savings deposits that ended up paying, on average between January and November, 12.55% monthly return to Venezuelan savers; while the interest rate for fixed-term deposits showed slight increases until reaching an average monthly balance of 14.67% in the same period. These results account for a strategy of disincentive to savings and stimulus to consumption. On the other hand, the interest rate of loans granted by banks grew 3.63% between November and December 2016, as a consequence of the high demand for money evident during demonetization, which made the financing of economic agents more expensive (see Figure 3). This situation reversed during 2017, when the monthly rate charged by banks averaged 21.49% between January and November. This result was due to expectations about the new pieces of the monetary cone, their incorporation into the economy and the frequent extensions to the deadline for the circulation of the 100 note, all of which reduced the pressure on the demand for money and reduced the cost of borrowing.



Source: BCV (several years).

Figure 3: Evolution of the weighted average interest rate

The demonetization slowed the rate of inflation growth, but it did not prevent prices in the economy from continuing to rise, nor did it facilitate the strengthening of the national currency. Thus, Venezuelan inflation reached an average monthly growth rate of 17.98% between December 2016 and May 2017, slightly below the average monthly price variation of 20.78% evidenced between July and November 2016, as a consequence of the liquidity shock caused by the demonetization and the decrease in the growth rate of monetary aggregates (see Figure 4). This result ended up being much lower than the behavior of month-to-month prices between June and November 2017, where it reached a monthly average of 36.6% and exceeded for the first time the threshold of 50% per month, this as a result of the government's strategy of higher public spending expressed in recurrent increases in wages, salaries, bonuses and pensions, which pushed up the amount of money in circulation. In this order, in the face of a stagnant economy, the government's lack of interest in restructuring the tax system, the scarce recovery of the international marker of the price of Venezuelan oil, and the high cost of external and internal indebtedness, led to the printing of new coins and notes becoming the main source of government financing, causing greater price volatility. Thus, Venezuela abandoned its long history of galloping inflation that began in 1983 (Hurtado and Zerpa, 2017) and began to go through a hyperinflationary cycle. According to data from the Venezuelan National Assembly, in 2018 inflation closed at 1,698,488.2%.



Source: National Assembly of Venezuela, own estimates (several years).

Figure 4: Inflation

And with respect to the impact of demonetization on productive activity, the Venezuelan economy fell in 2016 for the third consecutive year. This climate of recession was a consequence of the government's strategy of nationalization of companies; temporary occupation of productive units; sanctions and closures of business organizations; generalized use of price controls; strict control of the exchange rate that was maintained for more than 10 years, causing an overvaluation of the currency, encouraging imports and limiting access to imported raw materials; rigid control of quantities; continuous increases in public spending; and a drop in the international price of Venezuelan oil. All this forced the paralysis of the productive activity and generated the closing of companies, a decrease in the number of available jobs and an increase in the scarcity of goods and services. This result can be seen in the fall of 3.89% and 6.22% in real gross domestic product during 2014 and 2015, respectively (IMF, 2018). The recessive environment thus recognized deepened in 2016 due to the liquidity shock implied by the exit of the 100 bolívar note from circulation, closing that year with a fall of 16.46% (IMF, 2018) in productive activity, that is, the production of goods was reduced three times more compared to the fall evidenced during 2015. The effects of demonetization, mainly those generated by the successive extensions to the exit of the demonetized banknote, the delay in the incorporation of the new pieces of the monetary cone, the delay in the adaptation of the banking system's technology to the highest denomination notes, and the validity of incentives for the demand for cash in parallel markets, had an impact on the Venezuelan economy, which during 2017 contracted by 14% (IMF, 2018), thus ending for the fourth consecutive year in recession.

VI. Conclusions

Given the existence of money laundering processes, the smuggling of banknotes, the excessive storage of national currency in cash, and evidence of prices volatility in the Venezuelan economy, the Nicolas Maduro government decided on December 11, 2016 to take out of circulation 100 bolívar notes. This policy represented a monetary shock that altered the evolution of the economy and required complementary measures to mitigate its negative effects on the welfare of the population.

Thus, the demonetization generated in the Venezuelan economy: 1) cash shortage as a consequence of the outflow of 4,300 million banknotes, 77% of the money circulating in the country; 2) change in production decisions and commercialization of goods, due to increased costs and uncertainty about what to do with demonetized banknotes; 3) increase in deposits in the Venezuelan banking system; 4) greater use of electronic payment systems, debit cards, credit, checks and other options for the purchase of products without the need for cash; 5) protests in the offices of banking institutions, regional headquarters of the BCV, and acts of vandalism against the commercial sector; 6) greater seizure abroad of funds expressed in notes of 100; 7) change in the evolution of monetary aggregates, which grew at a lower rate between December 2016 and February 2017, and then entered into an expansion phase from March 2017 to the present; 8) a rise in the difference between the demand for deposits and the demand for coins and notes; 9) despite the demonetization, the issuance of the 100 note increased and its role within the cash in circulation rose; 10) the passive interest rate decreased and the active interest rate expanded; 11) the inflation growth speed slowed down, a result that was reversed as of March 2017; and 12) the fall in productive activity increased.

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