POSSIBLE EFFECTS OF ELECTRONIC PAYMENTS ON THE MONEY SUPPLY IN THE ECONOMY

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ABSTRACT
The Blinder (Blinder, 1995) electronic money system, money supply (defined Ly-Alkhsvs narrow money or M1) through the money multiplier change and electronic money to replace money in the hands of its people. Given that in recent years, the use of electronic Prdakht-Hay various forms in Iran is increasing. They are the question of what impact the increased use of electronic money in the money supply would be possible? Therefore, in this study, the theoretical models to explain the potential effects on the money supply in the form of electronic money stretch the supply of money relative to the money in the hands of the people, by definition M1 (including and excluding the volume of electronic money), rather than legal reserves to demand deposits (rd) and statutory reserves of electronic money, electronic money balances (rem) in 25 scenarios for 2014 were examined. Results Nshan gives an M1 strain of the money in the hands of people with an increase rd and rem, degradation decreases, which means reducing the potential impact of electronic money on the money supply. If rd and rem are equal, stretching the supply of money relative to the money in the hands of the people, while the volume of electronic money in the definition of money is considered more of a case where not included. So the central bank to maintain its power in the implementation of monetary policy and the substitution of electronic money, rather than money in the hands of people, probably the rate of legal reserves and demand deposits of electronic money and electronic money at the highest limit in the definition of money not.

Keywords: Electronic Money, the Money Supply of Narrow Money (M1), the Rate of Legal Reserves

INTRODUCTION
The digital economy refers to an economy based on digital technologies such as communication networks (Internet, Aytrant¬Ha, Akstrant¬Ha & VAN's), computers, software and other related information technologies.

Sometimes the digital economy Internet economy, new economy or called simply the Web economy. In this new economy, Shbh¬Sazy digital and communications infrastructure creates a global platform virgin, according to Sharma (2006) and Washington (2000), the characteristics of the clients and small firms, financial transactions ¬Shan digitally and through the practices of electronic payments through mobile devices and networked computers can be performed, carrying.

The digital economy also compete in the Internet and other network computing and communication technologies are applied and the flow of information and technology may exist that drive electronic commerce (Leonard and Britton, 2006).

So in the context of the new economy that is emerging electronic Prdakht¬Hay As the digital revolution, the development of information technology and communications (IT & ICT) and e-commerce is evolving is the increase in volume.

Prdakht¬Hay a form of electronic, electronic money is due to an increase in transactions "online" and electronic Prdakht¬Hay is expanding. According to Nvzhrvbvdn electronic money, still not provided a single definition of it. Europe in your community Pysh¬Nvys Yyn¬Namh, electronic money is described as such (Milloni & Millani, 1998):

(A) Memory card or computer chip on a piece letter as a letter is stored.
As a means of payment for the obligations of persons other than the issuer institution has been accepted. For this purpose it was created as an alternative to coins and banknotes letter available and consumers, should be provided.

To transfer a limited amount of funds and Prdakht¬Hay has been created. Electronic money in plain language, a stored value or prepaid payment mechanism in which the value of the funds or the value stored in the device and the electrical component that can be used for is the consumer.

They are purchased by the consumer and customer value letter and every other apparatus is connected directly to the consumer from the device or through the POS, or even networks like the Internet Rayanh¬Ay shopping to do, from reduced inventory flora.

Overall, the monetary value of the electronic money stored in the form of digital storage in the transaction They are available for immediate Prdakht¬Hay respectively. The Cane and Davis (1995) Nqsh¬Ha and electronic money functions include:

- electronic money, value for digital information without dependence holds bank accounts.
- electronic money could be through the transfer of digital information, the value is transferred to another person.
- Prdakht¬Hay remote electronic money, especially in public networks (such as communication networks and the Internet) is very suitable.
- In some cases, third party monitoring and verification of electronic cash does not deal.
- electronic money Prdakht¬Hay small amounts (reseller) suitable respectively.

The development of electronic money according to its specific characteristics, widely all markets and economic variables will influence the obvious points (Mzyt¬Ha and challenges) include the following:

- reduce the cost of money transfers in the banking system and increase the efficiency of exchanges
- increase ease of Prdakht¬Hay reseller and trade
- Refresher Bank¬Ha on the task and resource Vasth¬Gry
- impact on the effectiveness of monetary policy
- The role of central banks in the money market

**Problem Statement**

In recent years, ICT developments will tend to use electronic money instead of traditional money in e-commerce and Prdakht¬Hay rise in the meantime, Iran is not an exception. Iran's economy for the following reasons, the development of electronic money is necessary:

- Central Bank statistics show that the cost of publishing and is the first bank in the high, low and average life of banknotes in two times less than the global average life expectancy is the way that money in 5 years, while the average Worldwide it is the equivalent of 10 years. Second, per capita of about 100 sheets, but the bill leaves it very bottom is the global average (Galileans, Journal of World Economics, 2010).
- In recent years tend to use a variety of electrical and electronic money is increased Prdakht¬Hay that in order to complete the internal and external e-commerce cycle occurred.
- the development of electronic banking to enhance efficiency and offer new services to customers of the banking system, especially the banking system of private Bank¬Hay implemented.

While accepting the need to expand electronic money and reducing costs in the central bank printing money, increase efficiency of transactions, the need to be physically present in transactions and reduce transaction costs in throughput but its effects on macroeconomic variables money including demand and supply of money is certainly not clear that it should be examined.

What is important in this succession of notes and coins in the hands of people with e-money is the money supply affect the change of course that we can expect the greatest effect, the narrow definition of money, or M1.
Review Article

Thus, the volume of notes and coins in circulation, the volume of deposits, the relative weight of money in circulation to deposits ratio of the primary criteria for evaluating the potential effects of currency substitution in the hands of people with money are electronic. With the development of electronic money, the main question raised by the increasing use of electronic money GME what the possible consequences on the supply of money in the economy will follow? Is the money supply will decrease? And given that most studies agree that the development of electronic money could reduce the effectiveness of the Central Bank Ngrany–Hay for monetary policy and the role of central banks to provide control. Central Bank of Iran in the face of such a situation will show what your reaction? What a change in monetary policy tools such as legal reserves rate will apply? And whether the definition of money will change? In order to answer these questions, the study tries to explain the theoretical models using stretch the supply of money relative to the money in the hands of the people, the potential impact of electronic money on monetary variables analyzed Iran's economy. In this study, the development of scenarios, possible effects on the development of electronic money and money supply, the central banks also been investigated. The main objective of this study was to analyze the following:

≥ Impact of electronic money on money supply
≥ The substitution of money in the hands of people with e-money
≥ Identify effective channels of electronic money on the money market
≥ Redefines the role of the central bank to control money market elements

The Review of the Literature

Background Theoretical Research

In this section, Pyshynh–Hay comments in relation to electronic money, the impact on money supply and central banks in terms of the role and power of expression can result.

3-1-1- Features of Electronic Money:

Although electronic money in the development process, many different kinds of products with different features have been introduced electronic money. But in the design of all they have tried all the features of central bank money (currency) must be considered. In general, electronic money products can be divided into two categories of technical terms.

1. The smart card-based electronic money: electronic money products based on smart cards, to facilitate payments with low value retail transactions "face to face" designed so it is expected that e-money products based on smart cards, the use of central bank money as well as less use of credit cards and pay for direct payments reduce. The most likely use of Czech, payment cards and credit card payments will also reduce indirect.

2. Computer software-based electronic money: Manufacture of computer software-based electronic money through reduced transaction costs by facilitating money transfers among different types of accounts, banks and countries as well as learning overflows, demand deposits affected, and it will reduce. The most important feature of electronic money, the transnational or borderless its impact on other economic variables plays an important role in the government. Although it is considered a source of some negative consequences electronic money but to promote the widespread dissemination of international trade performance, substantial assistance he does. Naturally, the use of electronic money, international funds transfer fee, will be reduced significantly. Of course with the unprecedented increase the efficiency of international payments, may increase the instability of the global monetary system and cause conflicts between publishers and consumers of electronic money on the one hand and on the other hand will lead central banks. Other features of electronic money, legitimate money or money Rayjnbdv that it would be published in early stages, it reduces public acceptance. In addition, electronic money and other means of exchange against the currency today, requires the physical presence of the payer and the recipient does not pay at all for certainty, because of electronic money can be made through computer networks to an (ISP) will transfer.

3-1-2- Types of Electronic Money in E-Banking:
The precise definition of the types of bank cards, which delivers often as electronic money are the:

1. Debit card or pay; this card is designed for customers who wish to do, but Nmy¬Kvhahnd Prdakht¬Hayshan through the use of credit and debit monthly, usually in the form of a debit Tk¬Mamlh¬Ay are the.

2. Credit cards, this Kart¬Ha are of two types: payment cards, payment cards, re-fixid variable.

3. Costs, the card of this type of credit cards, Kart¬Ha are almost identical, except that at the end of each month, the total amount of the invoice must be paid.

4. Smart cards, type of cards, debit or credit is the Pyshrft¬Ay with (Chip) and an important loss of memory, the mechanism of action, debit and credit cards, can be attributes Have. This type Kart¬Ha developing an important loss, but two famous include electronic wallet and Czech books.

− Electronic wallet, a smart card that can hold up to a certain amount. To enter personal money it requires proprietary code (PIN) is the harvest but do not code. E-wallet can be recharged repeatedly filled the authorized ceiling again.

− Electronic Czech, to use this card transactions reseller of electronic funds transfer at point of sale is used. Through electronic funds transfer at point of purchase and Mtsl¬Shdn electronic funds transfer terminal operations for My¬Pzyrd's bank account at the bank debtor and creditor elderly seller's account

The Impact of Electronic Money on the Money Supply
One of the e-commerce channels through which monetary variables can affect the spread of electronic trade in goods and services, expanding virtual Bank¬Hay and as a result, the prevalence of different forms of electronic money. It is obvious that the prevalence of electronic Pvl¬Hay need to keep notes and coins to the public, at least for transactions at the retail level is reduced and this would pave the way for reducing the supply of this type provide Pvl¬Ha by the Central Bank. Reducing the share of paper money in the basket of currencies for trading purposes, in turn, reduces the cost of creating, maintaining and managing it will be by the Central Bank. But on the other hand, costs related to threats found Janshyn¬Hay official currency stability and the credibility of the monetary system, will increase. These threats include loss of confidence in the firms strategic, operational problems, uncertainty about the rules and regulations, and take advantage of this type for the purpose of money laundering and tax evasion is Pvl¬Ha (Coppel, 2000).

In general, all electronic payment systems, such as cards, debit cards, SVC, electronic cash, electronic checks and all kinds of protocols proposed in this regard, payment instruments or other words, electronic money are the new economy.

The Blinder (1995) electronic money systems, may affect the monetary system in two ways:
1 Changes in the money supply due to changes in the money multiplier;
2 Changes in the velocity of money in the long run and hence the change in the general price level and interest rates.

In his view, the impact of digital currency to the creation of money depends on the money supply. He believes that e-currencies to replace the volume of notes and coins held by the public, are considered and since Pvl¬Hay in the hands of the people, constituting part of the money supply, so the change in demand for the people Pvl¬Hay supply The currency impact. The effect that can be expected, in the narrow definition of money, or M1 (Berentsen, 1998). Thus, the volume of notes and coins in circulation, the volume of deposits, the relative weight of money in circulation to deposits ratio of the primary criteria for evaluating the potential effects of currency substitution are working with electronic money.

Electronic Money and Reduce the Role of the Central Bank
The development of electronic money Ngrany¬Hay about the capabilities of the central bank controls the money supply has created. The ability of central banks to control money supply depends on the definition of money Ly¬Alkhsvs M1. If increased reliance on electronic money and money substitutes in circulation and demand deposits decreased to Bank¬Ha the M1 addition, the measure would not be correct to Nshan¬Dadn money in the economy and the central bank to control money supply and the need for Open market operations will be reduced (Rahn, 2000). This eventually leads to loss sometimes occurs
Darayy-Ha and Bdhy-Hay Central Bank as the central bank Death (Death of central banking) placed learn. Faced with such a situation the central Bank-Hay may take the following decisions:

- Limit the strengthening of electronic money to avoid replacing central bank money
- Spread of electronic money in the same way as the central bank issuing money
- Use of contingency reserves for the balance of electronic money
- Obligation to absorb the excess liquidity caused by open market operations

These solutions, will enable the central Bank-Hay to take control of your money. However, as a last resort, perhaps the technology developments related to electronic money is prevented. Continue to reduce the role of the central bank in the market paid more accurate search is made.

Revolutionary electronic money Dlal-Hayy for new Kynzyn-Hay monetary theory that the role of Bank-Hay to control costs money, or short and long term interest rates were adamant. In this context, electronic money supply in the economy in order to respond to the demand for mortgage loans is determined based on the amount of deposits My-Grydyd Bank-Ha. With the development of electronic money, this situation comes to "Vam-Hayy Sprdh-Hayy that loans create deposits create virgin than virgin". Therefore Bank-Hay Nrkh-Hay commercial loans based on Bank-Hay Bdhy-Hay business combination and determined Darayy-Ha My-Gyrd affected. The central bank, which before this, through determining the cost of short-term currency and interest rates play a key role in this respect My-Nmvd depressed elderly. The electronic money poses a challenge to the interpretation of new Kynzyn-Hay money creation through central bank's ability to control Nrkh-Hay denominated interest will decrease (Friedman, 1999).

As well as electronic money settlement expansion potential will lead to uncertainty in the financial system. My-Tvannd economic factors of demand for central bank money settlement refrain because there will be always the risk that economic agents, the money in the way that they requested otherwise by the parties, that the lack of liquidity may create uncertainty.

Another Kanal-Hayy electronic money can undermine the role of central bank demand for central bank Bdhy-Hay. Traditionally, demand for central bank Bdhy-Hay from the following sources exist that will affect the development of electronic money:

- Nyarhay precautionary Bank-Ha (in relation to contingency reserves Bank-Ha)
- Non-bank demand (public) for liquidity, especially in the form of banknotes
- Bank-Ha demand for settlement balances (Settlement balances)
- Pay for tax obligations
- Settling international Byn-Banky

**Empirical Studies Abroad**

In the field of electronic money and its impact on the supply and monetary policies, many studies have been done. The majority of studies have shown that electronic money has the potential to replace the money in the hands of the people and reduce the money supply. Also Chalsh-Hayy to the Central Bank the role of the central bank controls the money market by the central bank raised the Nmvdh-And that Vaknsh-Hayy My-Angyzd countries on the effects on the money supply will affect electronic money. For example, a number of these studies suggest elderly:

- Study Ramasamy *et al.*, (2006) as "the development of electronic money in Malaysia" in the short term and the long term effects of alternative payment mechanisms focused money in people's hands. The study was based on econometric methods (UVAR) for the period 2005-1985, about money in the hands of people (CU) as the dependent variable and the variable "number of ATM machines (ATM), the number of credit cards, (CC), variety electronic money (E-money) and deposits related to debit cards, "as independent variables was estimated. As well as GDP and interest rates have been considered as control variables.

The resulting estimates Nshan- short term and long term limit that Kshsh- respectively 2.49- and 2.78-electronic money is the variable that indicates the potential of electronic money, rather than money in the hands of the people is the Jaygzy-Shdn. The results of the study indicate that short-term and long-term
effects of e-money and other payment mechanisms on a significant amount of money in the hands of people and different forms of electronic money like electronic money and credit cards, can be in short long term replace the money in the hands of the people.

Polly (2001) explores the challenges Mtalh¬Ay revolution of electronic money on monetary policy and the central bank's ability to control the interest rate. He gives the expression "control challenges that lie interest rate of the spread of electronic money may Bdhy¬Hay for the financial system for the central bank to reduce its open market operations fail. Pali result due to increased tension opening, electronic money products can lead to monetary private sector and financial uncertainty and liquidity crisis for central banks. He also ways to prevent the above-mentioned financial crisis, "the use of electronic money in the settlement joint Byn¬Banky determine contingency reserves, asset-based or Daray¬Mhvr (ABRR) and electronic money insurance” is proposed and studied. He concluded with an evaluation of these guidelines to determine contingency reserves based on total assets of the financial system, the proposed approach is the best.

Brnstn (1998) Mtalh¬Ay to the theoretical impact on the supply and demand of e-money is paid. In this study different states that electronic money may be included in the definition of money and the money supply is effectively discussed. He is to examine the possible changes in M1 in the absence of electronic money in the narrow definition of money (M1), banks are required to hold reserves has not been and is not legal, the relationship between M1 stretch for the following:

$$\varepsilon = \frac{\partial M_1}{\partial CU} \frac{CU}{M_1} = -\frac{1-r_d}{r_d} \frac{c}{1+c}$$

Where CU notes and coins in circulation, rd volume of legal reserves to Sprdh¬Ha, c Sprdh¬Ha of money in the hands of the people. Stretch formula can be said that whatever legal reserves rate (rd) smaller than money in the hands of people Sprdh¬Ha (c) greater traction M1 will be larger.

Brnstn using traction M1 (as above) the potential impact of electronic money on the money supply for 1996, some countries use the Table (1-3) mentioned occurs:

<table>
<thead>
<tr>
<th>Percentage change in M1 thus become a currency in the hands of the people to electronic money</th>
<th>Deposits of money in the hands of people (cd)</th>
<th>Legal reserves to deposits ratio (rd)</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>18</td>
<td>1</td>
<td>France</td>
</tr>
<tr>
<td>14.5</td>
<td>42</td>
<td>2</td>
<td>Germany</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>15</td>
<td>Italy</td>
</tr>
<tr>
<td>20.5</td>
<td>37</td>
<td>1.3</td>
<td>Japan</td>
</tr>
<tr>
<td>12</td>
<td>44</td>
<td>2.5</td>
<td>Swiss</td>
</tr>
<tr>
<td>2.8</td>
<td>45</td>
<td>10</td>
<td>America</td>
</tr>
</tbody>
</table>


**Empirical Studies in the Country**

In this study, first tried the possible effects of electronic money and replace the money in the hands of the people it is quantitative. Observations show that most studies have been conducted in the country for theoretical under a number of them are:

Barbershop (2009) in an article entitled "The impact of electronic money on the demand and supply of money" at the Second Conference on Electronic Commerce provided the theoretical to the above is the issue. The results of his study, was as follows: electronic money, standard money demand and reduce concerns about governance and the effectiveness of central bank monetary policy has created. Electronic
money is gradually replacing conventional money, but it should be noted that this substitution, would not be complete conventional and electronic money and money will coexist and compete. Monetary economist consensus shows that electronic money, notable developments in methods of payment, cost savings and productivity has increased, but the effectiveness of monetary policy and the role of the central bank NKasth and in some cases, monetary policy has been strengthened.

 specifying management plan as "the feasibility of e-commerce," the quarterback Deputy Commerce Department's planning and economic studies that have been done in 2008 during the massive impact of e-commerce literature, theoretical background of the impact of electronic money on supply and demand for money is given bill is paid.

**Specification Model**

In general, the impact of electronic money on M1 depends on three factors:

1. Willingness of the banking system to the expansion of its reserves.
2. Reserves for issuing electronic money and time deposit rates.
3. Type a description that is presented from the M1.

Central Bank monetary policy in order to maintain its power in the exercise of the above is likely to be through the development of electronic money will likely intervene, the rate of legal reserves and contingency related to electronic money will be set very high. Central banks also could redefine the M1 and the addition of electronic money in its monetary policy tools will also be on hand. Therefore, if electronic money is added to the definition of M1 then we have to define money.

Replacing paper with electronic money in the hands of the people of the two channels to affect M1: First, make money in the hands of the people to electronic money, M1 directly affects. Secondly, with the addition of electronic money on monetary basket public, bank reserves and, consequently, the volume of deposits (D) are also affected. The second channel because a large potential impact on M1 is of utmost importance. General state of the M1 in the development and spread of electronic money in the form of Table (1-4) was to:

**Model of Money Creation**

Typically, to determine the factors affecting the supply of money, the money is used to create the model. The money is used for the creation of money in the economy of the multiplier effect that the monetary base changes leading to changes in the money supply occurs. The following analysis is based on monetary multiplier based on a simple model of money creation, the impact of electronic money on monetary multiplier of the money supply shows that the relationship between the money supply and the monetary base states.

The monetary base consists of currency in circulation plus demand deposits volume and the relationship between the M1 and the monetary base by which the money supply M1, or the narrow definition, H is the monetary base and the money multiplier m. In its simplest form, the money multiplier using the following formula so that it comes to:

\[
\frac{dM^S}{dH} = \frac{1+cd}{cd+rr+er+r_{em}}
\]

\[
H = CU + D + RE, \quad M_1 = CU + D + Em, \quad CU = cdD, \quad RE = eD, \quad RR = r_cD + r_{em}Em
\]

Where CU volume of banknotes in circulation, EM electronic money left, D deposits to Bank¬Ha meeting people, RR legal reserves Bank¬Ha, RE Bank¬Ha excess reserves, H monetary base, cd than

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money in the hands of people demand deposits, rr legal reserves to deposits ratio visit, er additional reserves to deposits ratio rem visual and electronic money balance of electronic money is legal reserves. The money multiplier is an appreciable difference $Fvq¬Alzkr$ with normal money multiplier (without electronic money) is the denominator in the formula, rem of legal reserves of electronic money, electronic money is added to the residue.

In other words, if we assume that there is electronic money that rem in formula obtained multiplier is zero, as usual multipliers it comes to hand.

**Brntsn Model (Berentsen, 1998)**

Brntsn to assess possible changes in M1, the pull of money relative to the money in the hands of the people, according to legal reserves required for modes Bank¬Ha in terms of maintenance and the lack of electronic money in the narrow definition of money is calculated as follows:

**Narrow Definition of Electronic Money, Including Money (Due to the Requirement to Maintain Legal Reserves)**

Due to the limited definition of electronic money, including money, M1 can be used for expression. On the other hand, in some countries, central bank reserves the right side of the balance sheet (Daray¬Ha) and the cash in the fund (VC) is maintained, then the substitution will cause a reduction in the cash held in the Fund With the increase in demand for reserves as Sprdh¬Hay Bank¬Bank¬Ha Central (left or balance sheet debt) to be equal so that:

$$VC = r_D D + r_{EM} EM + E \quad \Rightarrow \quad dVC = r_D D + r_{EM} dEM + dE$$

Also, constant excess reserves () and reverse equality Sprdh¬Ha changes with changes of electronic money () that:

$$dD = -\frac{1-r_{EM}}{r_D} dC \quad \Rightarrow \quad dM = dC - \frac{1-r_{EM}}{r_D} dC \quad \Rightarrow \quad dM = \frac{1-r_{D} - r_{EM}}{r_D} dC \quad \Rightarrow \quad \frac{dM}{dC} = \frac{1-r_{D} - r_{EM}}{r_D}$$

The above statement reflects the change in the money supply to changes in the quantity of money in circulation is used to calculate future tension in the My¬Gyrd.

**Electronic Money is Defined Taking Into Account the Limited Money (the Requirement to Maintain Legal Reserves)**

Due to the limited definition of electronic money in the money, it can be displayed. As well as former states that: excess reserves also remain constant and reverse ( $dE = 0$ )equality Sprdh¬Ha changes with changes of electronic ($dC = -dEM$ ) money that:

$$dD = -\frac{1-r_{EM}}{r_D} dC \quad \Rightarrow \quad dM = dC - \frac{1-r_{EM}}{r_D} dC - dC \quad \Rightarrow \quad dM = \frac{1-r_{EM}}{r_D} dC \quad \Rightarrow \quad \frac{dM}{dC} = \frac{1-r_{EM}}{r_D}$$

Brntyn tension can be calculated on the basis of 3 assumptions with respect to the definition of e-money account and non-account money, 6 pull volume of money in circulation is calculated relative to the money that them in the table (1-4) are:

**Reserve Requirements**

1. Electronic money is equal to zero.
2. The legal stored electronic money is transferred to the legal reserve.
3. The legal reserve is equal to one electronic money.

<table>
<thead>
<tr>
<th>ضرائط استخراجي</th>
<th>$r_{EM} = 0$</th>
<th>$r_{EM} = r_D$</th>
<th>$r_{EM} = 1$</th>
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<tr>
<td>تعريف پول</td>
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Table (1-4): can be used as follows:
(A) first row of the table shows the changes in a state M1 M1 is not included in the definition of electronic money. In this case, changes in the quantity of money in the balance of electronic money will depend on the rate of legal reserves. If so, M1 increased. If so, M1 and if it does not affect the legal reserves rate is high and decreases M1 will be reduced.

(B) The second row, change M1 in the case show that digital money is included in the definition of M1. In this case, if the rate of legal reserves balance of electronic money, not equal, M1 increased. If one is to convert money into electronic money in the hands of people did not M1. So in this case, if the rate is high Sprdh¬Ha legal reserves, changes in M1 will be small. In general, conversion to electronic money notes and coins in circulation, deposits increased Bank¬Ha and consequently the M1 will also increase. Thus, according to the numerical value of e-money rates remained Zkhayrqanvny, 6 modes to stretch money to make money in the hands of people that comes to it is shown in the table above.

Analysis of the Results of Research
To study the possible effects on the narrow definition of e-money funds, using money market statistics for 2014 from the Central Bank of the Islamic Republic of Iran, stretching the amount of money relative to the money in the hands of the sensitivity analysis and scenario analysis is an estimate.

Before analyzing the research findings, it seems necessary, the following:
(A) On the one hand, Bank¬Ha legal reserves rate at the central bank on monetary policy, credit and banking system, mostly to separate regulatory Type Sprdh¬Ha determined and on the other hand, the rate of legal reserves in the study as the independent variable and the probability, central banks in the face of the spread of electronic money to change that, however, range between 10% to 50%. Therefore, in this study, scenarios based on a rate of 10, 20, 30, 40 and 50% for legal reserves rate Sprdh¬Ha preparation and analysis is done on them at all, stretch the amount of money relative to the money in the hands of 25 people in the scenario Estimates in Table (1-5) is given.

(B) According to Central Bank statistics for 2014, the volume of money in circulation, equivalent to 225.1 thousand billion, with a growth rate of 17.1 percent compared to 2013, which has experienced. The volume of currency and deposits, respectively, 758.7 and 533.5 a meeting at the end of 2014 trillion rials respectively. The deposits of money in the hands of people to a meeting at the Bank for 2014, equivalent to 42.1% and the ratio of money-the equivalent of 29.7% of the volume of the money comes to the calculation basis My¬Gyrd action.

Scenario Analysis
In this part of the scenario analysis My¬Prdazym. Over 25 scenarios under study is the scenario that has been classified into five major groups based on the rate of legal reserves. The results of the calculation Kshsh¬Ha in Table (1-5) at 6 columns and 5 rows shown.

Kshsh¬Hay obtained show that the changes in the amount of money in the hands of people ( %ΔM1 ), the changes in the amount of money ( %ΔM1 ) what is the? In fact, if the money in the hands of people due to its substitution by electronic money changed a percentage of the money supply (M1) varies a few percent? has risen. In order to assess the likely implications of electronic money on the money supply is used.

For example, scenario 1, where Sprdh¬Ha legal reserves equal to 10% of the study occurs in two modes.
Review Article

1) If the money does not stretch the definition of electronic money in the amount of money relative to the money in the hands of people \( (\varepsilon = \frac{\partial M}{\partial C} \frac{C}{M} ) \) with the assumptions (and) respectively 2.67-, 2.37- and 0.3-turns. In the case of legal reserves rate is zero if e-money balances increased volume of electronic money to replace money in the hands of the people to be a percentage of the money supply (M1) amounted to 2.67% decline. Which is an increasingly significant changes in money supply due to the mechanism of money creation and money multiplier greater than one, most of the changes in the volume of electronic money and money in the hands of the people.

2) If the definition of electronic money in the money supply elasticity \( \varepsilon = \frac{\partial M}{\partial C} \frac{C}{M} \) under the terms of (and), respectively, 2.97-, 2.67- and 0 in elderly Fvq¬Alzkr interpreted that way. Table (1-5) pull money ( \( \varepsilon = \frac{\partial M}{\partial C} \frac{C}{M} \) ) of the money in the hands of the people of 2014...

Table/ Figure Title Missing: [PERSIAN WORDS/DIGITS NOT ALLOWED. REPLACE THEM WITH ENGLISH WORDS AND NUMBERS]

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<tr>
<th>سنارو</th>
<th>نرخ ذخایر قانونی</th>
<th>M=C+D</th>
<th>M=C+D+EM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>( r_{EM} = 0 )</td>
<td>( r_{EM} = r_D )</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>-2.67</td>
<td>-2.37</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>-1.19</td>
<td>-0.89</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>-0.69</td>
<td>-0.40</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>-0.45</td>
<td>-0.15</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>-0.30</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The Overall Results of Table (1-5) can be listed as below:

1. Bank¬Ha legal reserves at the central bank rate increases, tension decreases the amount of money relative to the money in the hands of people, in other words, there is an inverse relationship between tension and Sprdh¬Ha legal reserves rate. So if the central bank wants to be that of his control over the money supply and monetary policies to maintain legal reserves rate is likely to remain Sprdh¬Ha and electronic cash deposits rates determined in the upper limit is stopped.

¬Grdd. In this case, the electronic money increases the money supply increase in throughput. Of course this is just a theoretical framework is debatable.

The differences. It is only within the framework of theoretical possibility.

4. Most of the absolute value of the money in the hands of people stretching the amount of money equivalent to 2.97 and when the legal reserves rate at the lowest level (10% in this study) and the
Review Article

The definition of electronic money is money that the central bank is likely will do their utmost to avoid such a situation.

5. In situations where traction is no money to make money in the hands of the people. Therefore, the development of electronic money in the money supply leads to a reduction in throughput. The central bank can extend electronic money as a monetary policy contraction, and can also act as an auxiliary solution used to reduce swelling. However, this, on the assumption of monetary inflation in the economy, will be true. Table (2-5) A number of studies have been expressed in relation to inflation, mostly on the subject agree that part of inflation in the economy, money is the root of increasing the money supply and liquidity, resulting in.

Table (2-5): A number of studies on the causes of inflation in Iran

<table>
<thead>
<tr>
<th>Consequence,</th>
<th>Liquidity ratio</th>
<th>Internal studies</th>
</tr>
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<tbody>
<tr>
<td>Inflation is a monetary phenomenon and the effect of liquidity on inflation is very high. Production and liquidity of the important variables affecting inflation have also increased the sensitivity of inflation to the money after the revolution. Inflation is a monetary phenomenon, in addition to exchange rate fluctuations have a significant effect on inflation. Inflation is a monetary phenomenon, and liquidity is the most important factor influencing inflation. Liquidity is a very important variable in explaining inflation, and monetary authorities to control inflation in the future can now use their monetary policy. An important factor affecting liquidity is inflation, the price of foreign goods and the exchange rate are very important. Inflation is a monetary phenomenon and even the relationship between inflation and liquidity there one by one. Inflation is a monetary phenomenon and the exchange rate and production is important. There is a two-way relationship between price and liquidity. The relationship between inflation and liquidity will be confirmed, but the relationship cannot be confirmed one by one. Inflation is a monetary phenomenon, the production and the exchange rate are important factors on inflation. Internal factors such as an excess supply of money and exchange rate changes are effective in creating inflation. Inflation is a monetary phenomenon and structural factors are important. Maximum impact on inflation is imported inflation. The root cause of inflation, structural problems in the manufacturing sector, the structural deficit of the trade balance, the structural deficit of the state budget, etc. Inflation is purely a monetary phenomenon and natural factors are important in explaining inflation.</td>
<td>1.2</td>
<td>Neely</td>
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<tr>
<td></td>
<td>0.521</td>
<td>Tabibian and Syria</td>
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<tr>
<td></td>
<td>0.95</td>
<td>Davoodi</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Jalali Naini</td>
</tr>
<tr>
<td></td>
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<td>Afshin Nia</td>
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<tr>
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<td>0.71</td>
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<tr>
<td></td>
<td>0.9</td>
<td>Kazernouni and Asghar</td>
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<tr>
<td></td>
<td>0.96</td>
<td>Central Bank</td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>0.216</td>
<td>Taiebni</td>
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<tr>
<td></td>
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<td>oskooi</td>
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<td>Moradi</td>
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<tr>
<td></td>
<td>0.27</td>
<td>Karimi and tavakoli</td>
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<td></td>
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<td>Ba fkr</td>
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<tr>
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<td>0.54</td>
<td>Ministry of Economic Affairs and Finance</td>
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<tr>
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<td>Kazem Yavari</td>
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</table>
CONCLUSIONS

ICT developments to increase the use of electronic money in the electronic Prdakht−Hay. Open e-money central banks print more money leads to lower costs, increase efficiency of transactions, the need to be physically present in transactions and reduce transaction costs paid in throughput but its effects on macroeconomic variables such as money supply is cut Not specified. The succession of notes and coins in the hands of people with early indicators for assessing the potential effects of currency substitution of electronic money in the hands of people with money is electronic.

Money market and central bank policymakers Mvajh−And with the fundamental question of whether the spread of electronic money, the money supply decreased? The central bank to maintain its power in the money market and monetary policy, what their reaction show? Therefore, in this study, the theoretical models to explain the potential effects on the money supply in the form of electronic money stretch the supply of money relative to the money in the hands of the people, by definition M1 (including and excluding the volume of electronic money), the ratio of reserves legal demand deposits (rd) and statutory reserves of electronic money, electronic money balances (rem) in 25 scenarios for 2014 were examined.

Results Nshan− gives an M1 strain of the money in the hands of people with an increase rd and rem, degradation decreases, which means reducing the potential impact of electronic money on the money supply. If rd and rem are equal, stretching the supply of money relative to the money in the hands of the people, while the volume of electronic money in the definition of money is considered more of a case where not included.

Possible reactions to the phenomenon of e-money central banks in both conducted in reverse order. The central bank on the one hand you-can the spread of electronic money as a monetary policy contraction and act as an auxiliary solution to reduce the swelling. This applies in situations where traction is no money to make money in the hands of the people and the development of electronic money can be used −Grdd reducing the money supply. On the other hand, the central bank to maintain its power in the implementation of monetary policy and the substitution of electronic money, rather than money in the hands of people, probably the rate of legal reserves and demand deposits of electronic money and electronic money at the highest level set in defined not in terms of money. The decisions that will be applied by the central bank would be affected by political factors and command economy that dominated the economy.

REFERENCES


