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AN ANALYSIS OF GROWTH OF E-BANKING SERVICES IN INDIA AND ITS IMPACT ON ANNUAL INCOME OF SCHEDULED COMMERCIAL BANKS OF INDIA

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ABSTRACT

Electronic banking is functional for quite some time now in the form of automatic teller machines and phone/mobile banking transactions etc. Banking sector has been revamped by the Internet, a new delivery channel for banking services which is advantageous both consumers' and banks. It has also permitted banks to slip into new markets and stretch their geographical expanse. Many even find electronic banking as a possibility for underdeveloped countries to advance developmental stages. With various initiatives taken by Reserve Bank of India, India has come a long way as far as e banking is concerned. The study is purely based on the secondary data obtained from www.rbi .org. This study provides a historical overview of the role of RBI in the growth of e-banking services in India. This study also analyses growth of e banking based on three indicators (1)Analysis of Trend and Progress in Payment Systems in India over the year, (2) Change in total number of bank branches in India over the years, and (3) Change in total number of ATM branches in India over the years. It also examines the effect of growth of e banking services on the annual income of scheduled commercial banks. Linear regression model was used to investigate the relationship between e banking services on the annual income of scheduled commercial banks. The study concludes that there is a significant positive correlation between e banking services on the annual income scheduled commercial banks. Banks can increase their annual income and improve their profitability.

Keywords: E Banking Services, Banks' Profitability, Scheduled Commercial Banks Of India

E Banking Services

Electronic banking is functional for quite some time now in the form of automatic teller machines and phone/mobile banking transactions. It has been revamped by the Internet, a new delivery channel for banking services which is advantageous both consumers' and banks. 24/7 access to banking makes it fast, convenient, whatever the customer's location. Moreover banks can render its services more effectively and at very lower costs. Electronic banking also makes it convenient for customers to compare and contrast banks' services and products which in turn increases competition among banks. It also permits banks to slip into new markets and stretch their geographical expanse. Many even find electronic banking as a possibility for underdeveloped countries to advance developmental stages. Overseas customers can also access services easily from banks through internet based communication systems, which are developing more rapidly than traditional banking.

Growth Of E- Banking In India

With advancement & technological changes, the term which captured the utmost importance is "Online Banking”. E banking services include a range of banking and other services using electronic equipment. The services are-

- online banking
- phone banking
- electronic alert
- SMS banking
- fund transfer services
- ATM and debit card services
- SMS banking
- mobile banking
- fund transfer services
- Point of sales banking
- E statements
- Other e-commerce or value added services

Role of Reserve Bank of India in the growth of E banking Service In India: Historical Overview

Development of modern payment and settlement systems initiated with computerization in the banking industry in India. The emphasis was given on commercially important centers which account for 65 per cent of banking business in terms of value. To serve bulk and repetitive

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payments Electronic Clearing Service (ECS) was launched in 1990s. Amendments in the payment and settlement systems have been led by Reserve Bank's 3D approach of consolidation, development and integration.

To handle multiple credits to beneficiary accounts National Electronic Clearing cell was launched. National Electronic Clearing Service (NECS) drives on core banking solution of member banks. In the year 2000 there was a propelling need of consolidation of the existing payment systems in the form of Computerized Cheque Clearing (CCC), Electronic Clearing Services (ECS) and Electronic Funds Transfer (EFT). Emphasis continued to be given to increase the levels of usage of electronic funds movement system.

In November 2005, a robust electronic payment system was launched to allow one to one funds transfer requirement of individuals and corporate. The National Payments Corporation of India was set up in 2009 as an umbrella organization for all retail payment systems (under section 25 of the Companies Act) .The main objective of this organisation was to consolidate and integrate the multiple banking systems with different service levels into a national standard business process for all retail systems. To enable infrastructure for financial transactions between private parties, the NPCI implemented the Immediate Payment Service (IMPS) in 2010. The service offers an instantaneous, 24x7 interbank electronic fund transfer service, which can be performed via mobile, internet, or an ATM. This service is superior to the previously used NEFT service, as NEFT transactions are settled in batches and hence are not in real time. Also, the NEFT service is only available during the working hours of the RTGS system, while the IMPS can be used at any time

To stimulate the growth of the electronic payment system, the Reserve Bank had waived processing charges in March 2006.This has been re-introduced from July 1, 2011 by way of a service charge from originating banks to provide adequate compensation to banks that manage the operations and the destination bank.

Prepaid payment system allow transaction for goods and services against the value stored on payment instrument. It was in the form of smart cards, magnetic stripe cards, internet wallets, mobile accounts, mobile wallets and paper vouchers. Growing usage of mobile phones has encouraged banks and non-banks to develop new payment services for their customers. The ever increasing number of mobile phone users in India exceeds the number of card holders and their network covers a very large area. Therefore, a payment mechanism using mobile phones has turned out to be a convenient mode for small value transactions. Accordingly, banks in India are tapping the potential of this mode of payment and promoting this as a delivery channel for small value retail payments. As at end March 2013, 55 banks with a customer base of around 23

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million were providing mobile banking service in India compared to 49 banks and a 13 million customer base at the end of March 2012. During 2012-13, 53 million transactions valued at around `60 billion were transacted, thus registering a growth of 108 per cent and 229 per cent, respectively, over the previous year.

In 2012, the RBI, in its Vision 2012-2015 document, recognized the development of new e-payment systems and the increasing proportion of transactions taking place through these systems. The introduction of technology such as cloud computing, mobile telephony, service oriented architecture, and an increasing popularity of the virtual world would, according to the RBI, lead to significant changes in the way payments would be processed in the future. The document elucidated the possibility of the movement away from cash transactions to electronic transactions, leading to their goal of a 'less-cash economy'

Banking Sector Growth indicators

Growth Indicators Given By World Bank

In 2006 World bank as a part of a series on how the Financial Sector Development Indicators (FSDI) enhances the assessment of banking sectors has expanded the range of dimensions beyond size to cover access, efficiency and stability.

Traditional indicators used for assessing development of a country's banking sector were:

• The ratio of M2 to GDP

• The ratio of private credit to GDP.

Both of these measures have been particularly used to examine the causal effects of financial development on economic growth of a nation.

New indicators given by Financial Sector Development Indicators (FSDI) assesses banking sector growth beyond size, and will help in examining access, efficiency and stability of banking systems. Performance of Banking systems can be judged differently on each of these four dimensions. Therefore it is mandatory to consider these dimensions jointly and in various combinations. The as new indicators for assessment of banking system are summarized in the table below.

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Table: New indicators for Banks Performance for going beyond size

Size	Access	Efficiency	Stability
• Deposit money bank assets to GDP • Central bank assets to GDP • M2 to GDP • Deposits to GDP • Intermediation • Private credit to GDP • Private credit to total credit • Private credit to deposits	• Broad access • Branch and ATM density • Average loan and deposit size • Loan & deposit accounts per capita • Household access • % of people with bank account • Firm access • Collateral needed for loan • % of firms with financing constraints	• Profitability • Return on assets • Net interest margin • Efficiency • Operating costs • Lending spread • Days to clear check • Competitiveness • Concentration ratio • Ownership	• Capital adequacy • Capital adequacy ratio • Asset quality • Lenders • Non-performing loans • Real credit growth • Loan concentration • Large loan exposures to capital • Borrowers • Firm leverage • Interest coverage ratio • Household debt to GDP • Liquidity • Liquid asset ratio • Other • Net FX position-to-capital • Default probability of banks

Source: Financial Sector Development Indicators (www.worldbank.org)

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Growth Indicators of E banking Services in India

E Banking transactions done through electronic channels such as debit/credit cards, Immediate payment services (IMPS), National Electronic Funds Transfer (NEFT), and Real Time Gross Settlement (RTGS) moving Indian economy from a cash based economy to A cashless economy. Digital India initiative of the Government of India envisioned to transform India into a digitally empowered nation and knowledge economy. One of professed role of Digital India is “Faceless, Paperless, Cashless”. The growth of e banking in India can be analyzed based on the following three indicators-

1. Analysis of Trend and Progress in Payment Systems in India over the year
2. Change in total number of bank branches in India over the years
3. Change in total number of ATM branches in India over the years

Analysis of Trend and Progress in Payment Systems in India

The Reserve Bank’s continued to make efforts towards introduction of newer digital modes of payment. The analysis of Trend and Progress of Payment Systems in India over the years will help in understanding the trends in total retail payment system's move from paper base to electronic base. The structure of total retail payments made by Banks in India can be presented as shown below-

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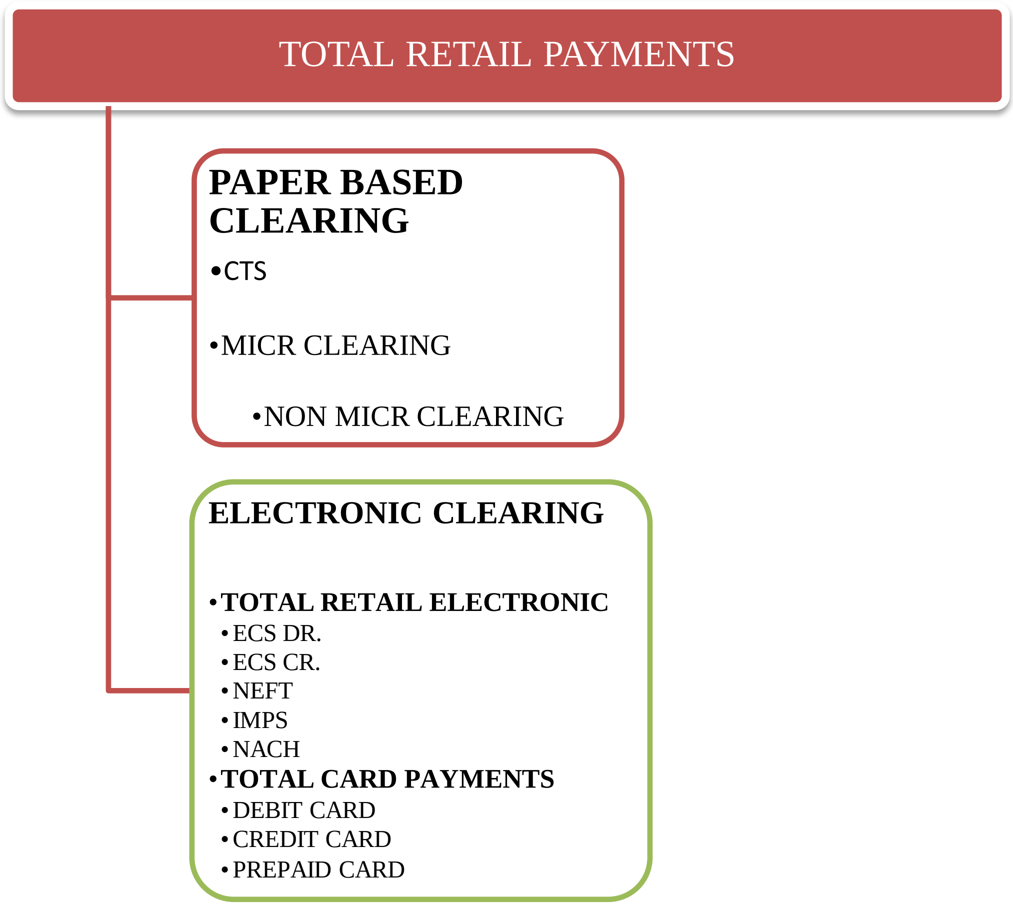


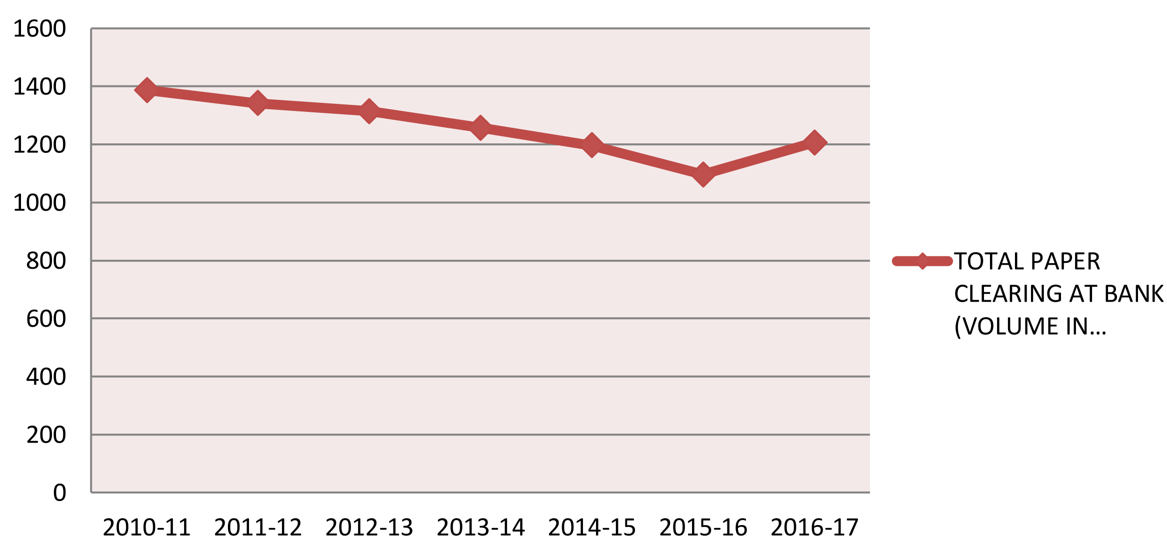
Analysis of Trend in Paper based clearing in Indian banking Sector

Paper based clearing of retail payment system includes cheque truncation system (CTS), MICR(magnetic ink character recognition) clearing & NON-MICR clearing. As seen in the below table and figure there has been a decline in paper based retail payment clearing in banks in India. This is an indicator of growth of electronic based clearing in the Indian banks.

Table 1: PAPER CLEARING (VOLUME IN MILLION)							
YEAR	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Cheque Truncation System(CTS)	160.4	180	275.116	591.4	964.9	958.4	1111.9
MICR Clearing	994.6	934.9	823.3	440.1	22.4	0	0
Non MICR Clearing	232.3	227	215.3	225.9	208.5	138	94.8
Total Paper Clearing	**1387.3**	**1341.9**	**1313.716**	**1257.4**	**1195.8**	**1096.4**	**1206.7**

Note:- Consequent to total cheque volume migrating to the cheque truncation system (CTS), there is no Magnetic Ink Character Recognition (MICR)

Figure 1: TOTAL PAPER CLEARING (VOLUME IN MILLION)



source: www.rbi.org- Payment and Settlement Systems and Information Technology

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Analysis of Trend in Electronic based clearing in Indian banking Sector

Trend in Total retail electronic Clearing

Retail Electronic clearing includes ECS (Electronic Clearance Service Dr. & Cr.), National Electronic Funds Transfer (NEFT), Immediate Payment Service (IMPS) & National Automated Clearing House (NACH *: started by the National Payments Corporation of India (NPCI) on December 29, 2012, to facilitate inter-bank, high volume, electronic transactions which are repetitive and periodic in natur*e). Below shown table and figure shows a sharp increase in the total retail electronic clearing over the years.

Table 2 : TOTAL RETAIL ELECTRONIC CLEARING

(VOLUME IN MILLION)

YEAR	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Total Retail Electronic Clearing	232.3	512.5	694.1	1108.3	1687.4	3141.5	4205
Total Card Payments (Debit Card +Credit Card+ Prepaid Payment Instruments)	502.2	647.5	678.1	1262.1	1737.7	2707.3	5450.1
Total Electronic Transaction	734.5	1160	1372.2	2370.4	3425.1	5848.8	9655.1

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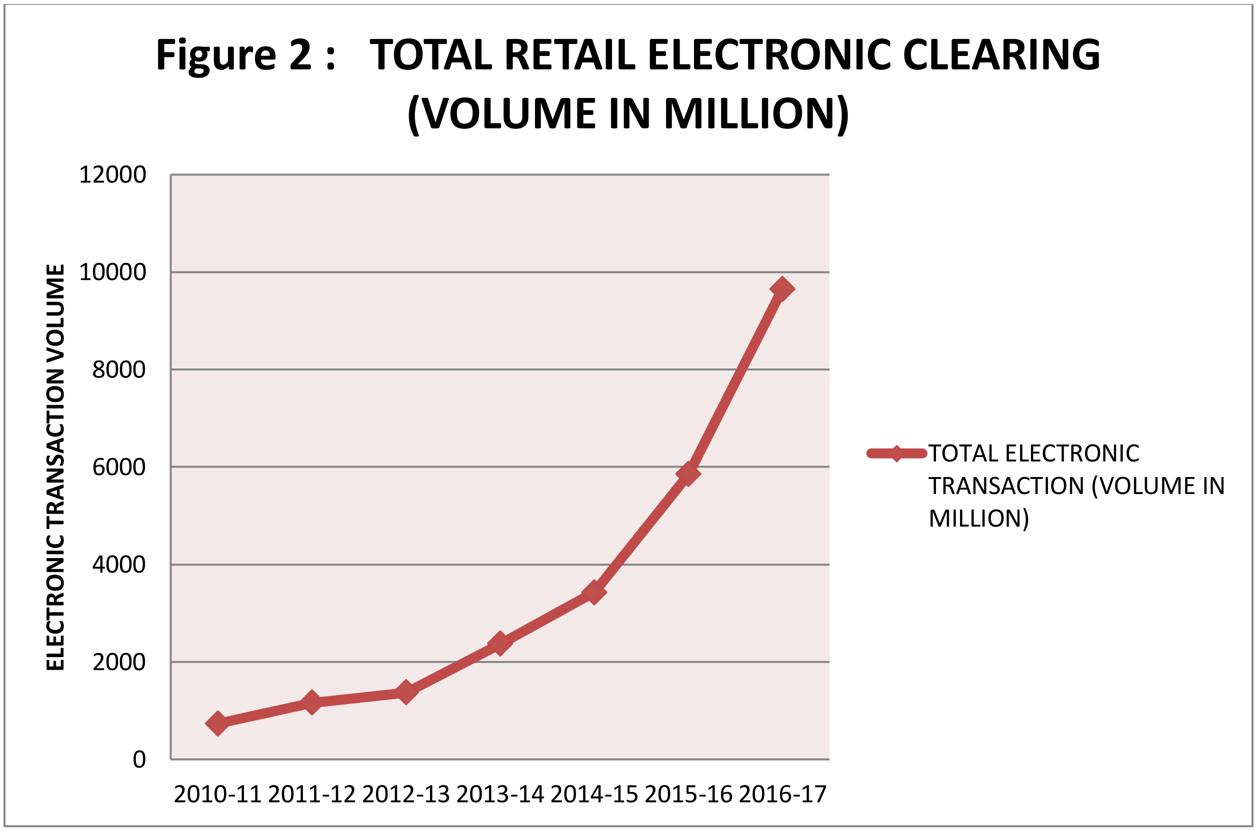

source: www.rbi.org- Payment and Settlement Systems and Information Technology

Total Card Payments Trend

Card payment includes the payment made by using debit card, credit card and prepaid Instruments (PPI). Below shown table 3 has been prepared form the data available under Table IX.1: "Payment System Indicators – Annual Turnover" in RBI's Annual Report for different years. The table and figure shows increase in the payment made by various cards. This indicates promotion of digital payment and Indian economy's movement towards cashless society.

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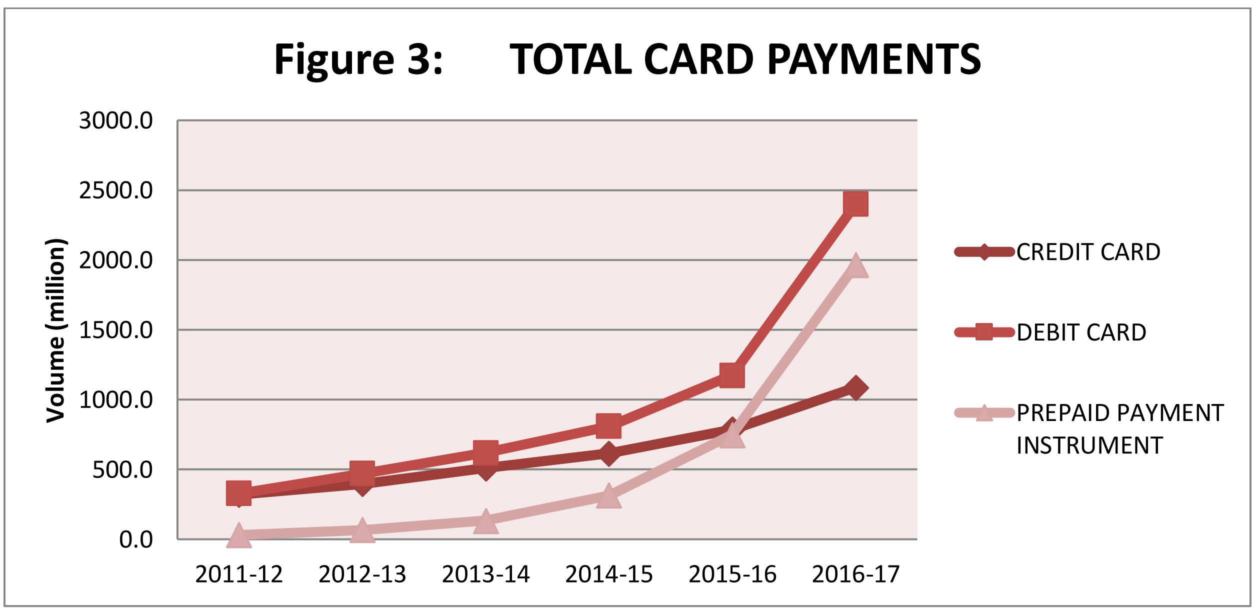
Table 3: TOTAL CARD PAYMENTS

(VOLUME IN MILLION)

YEAR	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CREDIT CARD	320.0	396.6	509.1	615.1	785.7	1087.1
DEBIT CARD	327.5	469.1	619.1	808.1	1173.6	2399.3
PREPAID PAYMENT INSTRUMENT	30.6	66.1	133.9	314.5	748.0	1963.7



source: www.rbi.org- Payment and Settlement Systems and Information Technology

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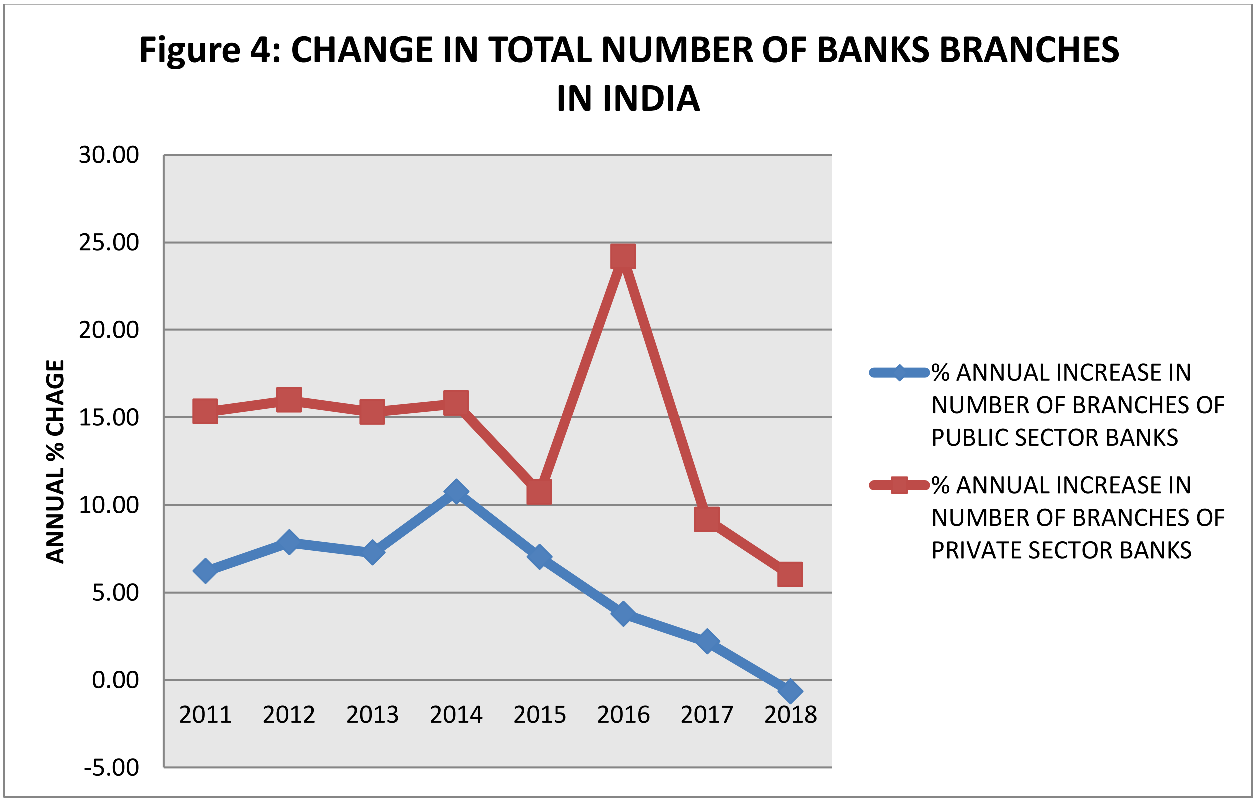
Change In Total Number Of Bank Branches In India: Move from "Brick and Mortar" to " Click and Mortar"

Banks in India have been toiling for moving from 'brick and mortar' system of banking to 'click and mortar'. the impact of their effort can be understood from the following table 4 and figure 4. A sharp decline in the number of total bank branches in India. This indicates that most customers' are not required to visit the branch for banking transaction rather they can perform banking transaction anywhere and anytime at their convenience .This is one of the key feature or e banking. Hence decline in total number of bank branches indicates growth of e baking services in India.

Table 4: CHANGE IN TOTAL NUMBER OF BANKS BRANCHES IN INDIA

BANKS	PUBLIC SECTOR BANKS		PRIVATE SECTOR BANKS	
YEAR	TOTAL NUMBER OF BANKS BRANCHES	% ANNUAL DECREASE IN NUMBER OF BRANCHES	TOTAL NUMBER OF BANKS BRANCHES	% ANNUAL DECREASE IN NUMBER OF BRANCHES
2010	59216	100.00	10114	100.00
b2011	62894	6.21	11662	15.31
2012	67829	7.85	13525	15.97
2013	72753	7.26	15594	15.30
2014	80564	10.74	18055	15.78
2015	86210	7.01	19986	10.70
2016	89468	3.78	24814	24.16
2017	91417	2.18	27085	9.15
2018	90817	-0.66	28710	6.00



source: https://dbie.rbi.org.in "Bank Branch Statistics from RBI's Data Warehouse"

Change in total number of ATM branches in India over the years

TOTAL NUMBER OF ATM BRANCHES							
YEAR/BANKS	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Public Sector Banks	50233	58193	69652	110424	128811	142459	148555
% Increase/decrease		15.85	19.69	58.54	16.65	10.60	4.28
Private Sector Banks	25412	37493	43101	48467	51490	55581	58833
% Increase/decrease		47.54	14.96	12.45	6.24	7.95	5.85

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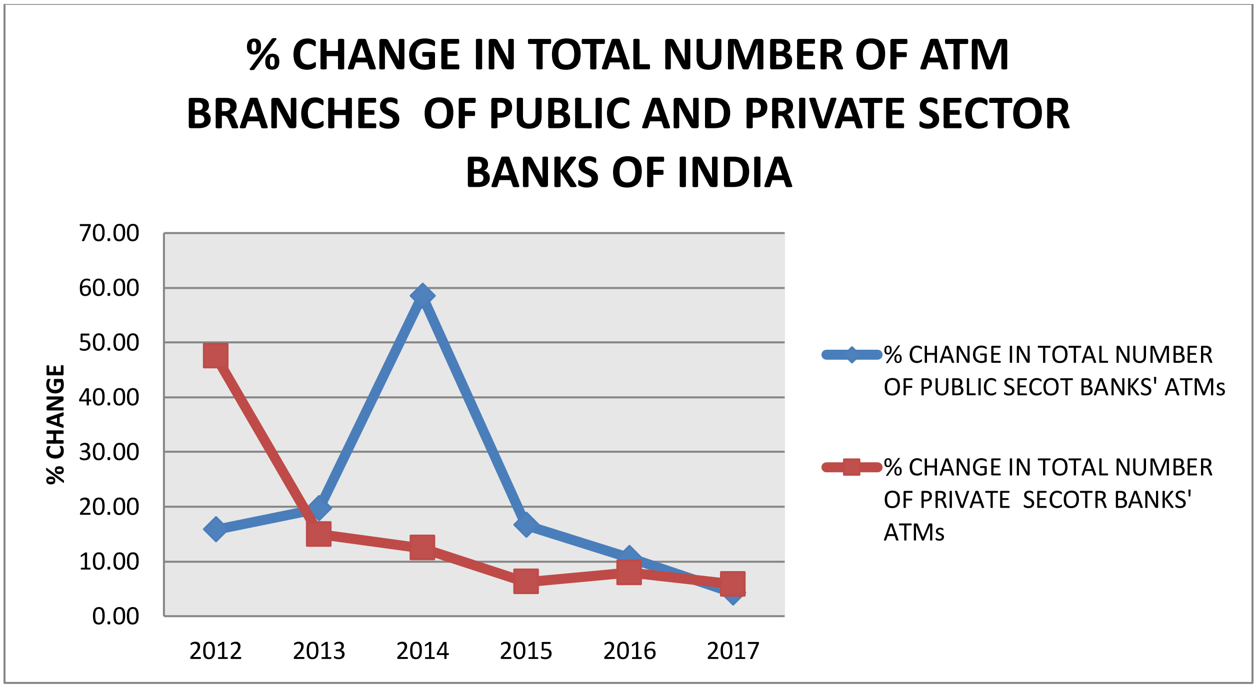

Source: www.rbi.org-"BANKWISE ATM/POS/CARD STATISTICS"

The above mentioned table and figure shows sharp decline in the number of ATM branches of Public Sector between 2013-2015. Private sector banks ATM branches have declined sharply from 2012-2013. This provides another evidence of Indian banking sector moving from brick and mortar set up to internet based virtual transactions.

CORRELATION BETWEEN ELECTRONIC TRANSACTION VOLUME AND SCBs s (SCHEDULED COMMERCIAL BANKS) TOTAL ANNUAL INCOME

The below mentioned table has the data of total annual electronic banking transactions and Indian banks' income. A regression analysis based on this table tries to find out the impact of increase in electronic transaction on the Indian banks' annual income.

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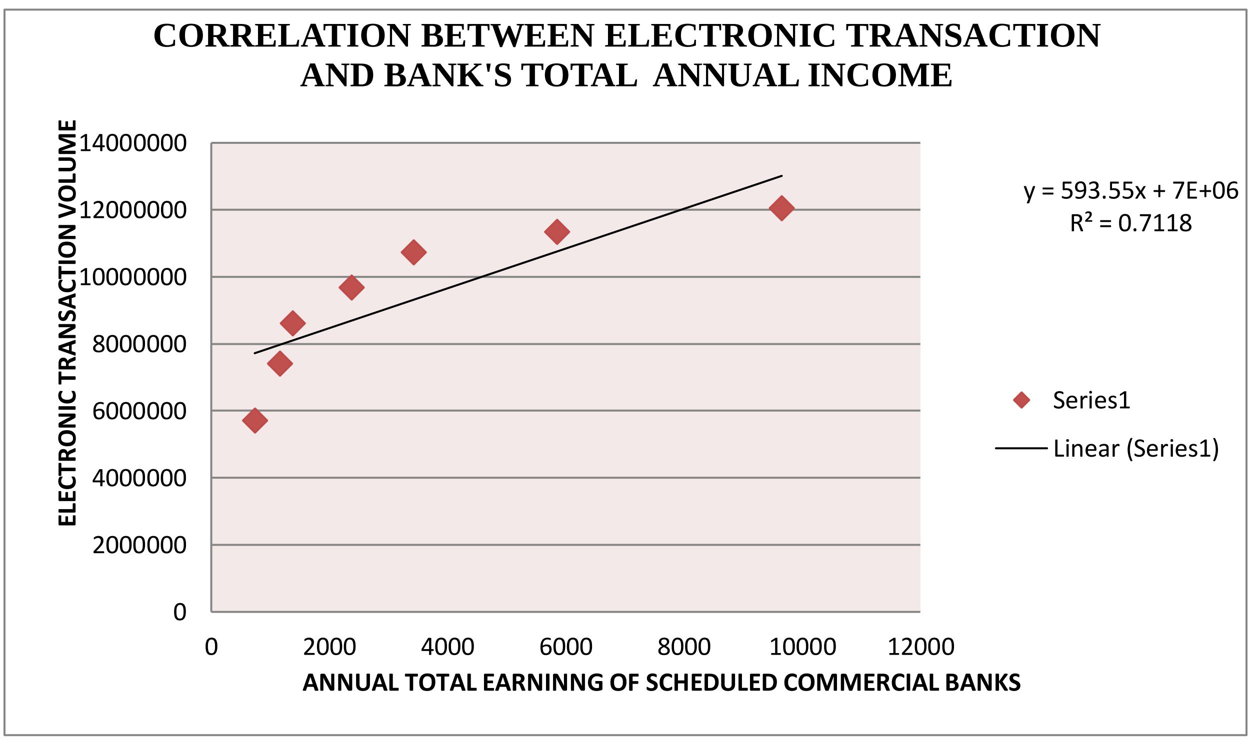
Table 5: CORRELATION BETWEEN ELECTRONIC TRANSACTION AND SCBs TOTAL ANNUAL INCOME		
YEAR	**ELECTRONIC TRANSACTION VOLUME (MILLION)**	**ANNUAL TOTAL EARNINNG OF SCHEDULED COMMERCIAL BANKS (MILLION)**
2011	734.5	5711908
2012	1160	7416276
2013	1372.2	8613911
2014	2370.4	9692252
2015	3425.1	10731851
2016	5848.8	11350381
2017	9655.1	12053252



REGRESSION ANALYSIS: SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.8819
R Square	0.7777
Adjusted R Square	0.7221
Standard Error	1721.9579
Observations	6.0000

ANOVA					
	df	***SS***	***MS***	***F***	***Significance F***
Regression	1	41489973	41489973	13.993	0.020
Residual	4	11860557	2965139		
Total	5	53350530			

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***
Intercept	-12476.2993	4452.9790	-2.8018	0.0487	-24839.7509
5711908	0.0016	0.0004	3.7407	0.0201	0.0004

The analysis found a significant positive correlation between electronic transaction volume and banks annual income with "r=.88" and p=.020. Increase in electronic transactions have a positive impact on banks' annual income. This indicates as the electronic transaction increases banks' income also increase. Therefore, we reject the null hypothesis that there is no impact of e banking transaction on banks' annual income.

Findings & Conclusion:-

With the analysis following finding /conclusions can be drawn-

- There has been a significant decline in the paper based clearing transaction volume of banks.
- A sharp increase in total retail electronic clearing transactions have been noticed.
- Payment made by cards: debit card, credit card & prepaid card instrument has been increased significantly.
- Indian banking industry's swift move towards click and mortar system can be noticed through reducing number of ATM branches and bank branches.

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- There is a significant correlation between increase in e banking transaction volume and annual income growth of scheduled commercial banks of India

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