Checks on Cheques[*]

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Abstract

Till 2004 the cheque collection standards were regulated when the RBI decided to deregulate them. Das and Das (2006) studied the scenario post deregulation of cheque collection standards in India and furthermore the cheque collection policies framed by different banks were compared. Even in the presence of alternate electronic payment options, on an average every working day involves cheque transactions of Rs. 44,654 crore. In this paper we mainly address the issue of float, which had not been covered earlier in sufficient depth. Such float occurs due to systemic inefficiency leading to (unintentional) enrichment of the banks at the cost of the masses who still find it convenient to use cheques as a mode of payment. A technique that involves a sampling strategy is proposed for estimation of banks' enrichment due to float. The enrichment is a function of four main parameters. Two of these four parameters are related to float days, identification of which requires a small sample study. A series of surveys conducted in the recent past revealed that in the limited sample covered, there were significant delays for collection of outstation cheques. A detailed analysis of the estimates for float and collection time of outstation cheques provide a range of estimates for banks' enrichment due to float. Based on conservative estimates, a confidence interval computation (using data generated from experiments conducted during 2006-09) indicates that the amount of banks' annual enrichment due to float is between Rs. 727 crore and Rs. 940 crore, and our being correct in making such a statement has probability 0.95. We also make some remarks related to policies on cheque collections like, immediate credit of small denomination cheques; UK's benchmarking of cheque collection standards and NCDRC's recent order on cheque collection benchmarks.

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Executive Summary

The Reserve Bank of India (RBI) had deregulated the cheque collection standards in India in November 2004. The scenario post deregulation of cheque collection standards in India was studied in a 2006 Technical Report [6] of the Indian Statistical Institute. The Report compared the cheque collection policies framed by different banks.

The objective of the present study is to address the issues that formally came up after the release of the Report [6]. Based on the Report the media had created a sentiment, subsequent to which a public interest consumer complaint was lodged in the National Consumer Disputes Redressal Commission (NCDRC). The subsequent deliberations held in length by RBI, Banks and NCDRC pertained to float funds and formulation of appropriate cheque collection policy. A two year long deliberations culminated in directions being issued by NCDRC and RBI, benchmarking the time frame for cheque collections. The issues related to float funds were inconclusive.

In his recent August 2008 speech [10], the then Deputy Governor, Shri V Leeladhar, highlights Reserve Bank's initiatives for promoting a safe, secure, sound and efficient payment system through development and promotion of electronic payments infrastructure. He raises concern over the challenges that lie ahead. He says that "…there are some nagging **efficiency issues** in the payment system. Whilst the current clearing cycle of T+1 basis for the cheques payable locally, compares favourably with the best in the world, it is necessary to look into the entire cheque collection cycle – from the time a customer deposits a cheque at a branch till the point of realisation of credit in his account. There is perhaps scope for continuous improvement in **overall** collection cycle. Going by the number of complaints received, it appears that customer-service in this area is not very customer-centric."

The enormity of the issue addressed here streams from the fact that even in the presence of alternate electronic payment options, on an average (based on 2007-08 data) every working day involves cheque transactions of Rs. 44,654 crore in value and 48.69 lakh in number (out of which respectively Rs. 26,320 crore and 47.96 lakh goes under non high-value clearing). Keeping such numbers in mind, in this paper we mainly address the issue of float, which had not been covered earlier in sufficient depth. Such float occurs due to systemic inefficiency leading to *unintentional* enrichment of the banks. We give an estimate of cheque float and banks' enrichment due to float through a sampling exercise. Also, to bring out the importance of various factors and parameters related to cheque float and banks' enrichment due to float, we provide a detailed commentary on these aspects. Furthermore, based on the sampling exercise, we carry out the analysis of the estimates for collection time of outstation cheques.

Our sample constitutes 144 cheques drawn on various outstation bank locations comprising metros and state capitals. These cheques are deposited at such bank locations (again metros and state capitals) so that its collection goes under outstation outward clearing. Apart from analyzing the float, the data generated helps one to get some insight on the efficiency and standards for outstation cheque collections.

To summarize, we draw the following inferences from this study:

A. Estimation of float (outstation cheques)
Based on the sample study involving 144 outstation cheques, a good estimate for the mean float days for outstation cheques μ is found to be 6.76 days. The true population mean of

float days is estimated to lie in the interval (5.63, 7.89), and we are correct, with probability 0.95, in making such a statement. Furthermore, the sample data suggests that we are correct, with probability 0.95, in rejecting the statement that the average population float days is at most 5.80 as against it being greater than 5.80 days. This evidence itself is compelling in support of our contention on the actual average float days in the population of outstation cheques.

An analysis of average figures for float reveals that for the public sector banks the average float is about three times that of the foreign and private banks. Table below give the details.

Average Float (days)	Drawn on Metro	Drawn on State Capital
Foreign and Private Banks	2.23	3.65
Public Sector Banks	7.23	9.53

B.   Estimation of collection time (outstation cheques)

The sample data also leads to 17.08 days as a point estimate of the population mean for collection time of outstation cheques. Furthermore, a 95% confidence interval is given by (15.13, 19.03). A test for the null hypothesis that the population mean $\mu = 15.43$, against the alternative hypothesis $\mu > 15.43$ is rejected at 5% level of significance. Thus, with a margin of possible error of only 5%, we can say that the true mean collection time for outstation cheques is greater than 15.43 days rather than it being at most 15.43 days.

It is also concluded that on an average, only in 35.4% of the cases an outstation cheque would be cleared within 10 days. To be more precise, the true proportion of cheques cleared within 10 days could be anywhere between 27.6% and 43.8%. Moreover, in case one would like to give banks a benefit of doubt then too we can say that only in at most 42.5% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

As one would observe, our estimates provide a very broad interval within which the true value lie. This is because our sample size is relatively small. A larger sample would only help in reducing the width of the confidence interval. Regarding our sample being a representative sample, it is worth mentioning that there exists a selection bias in our sample since it covers only cheques cleared between metros or between a metro and state capital. Thus, our estimates based on such a sample are expected to be underestimates. We keep this fact in mind but have not used it in any way in arriving at our estimates.

An analysis of average figures for collection time reveals that for the public sector banks the collection time is about two times that of the foreign and private banks. Table below give the details.

Average Time (days)	Drawn on Metro	Drawn on State Capital
Foreign and Private Banks	8.23	13.00
Public Sector Banks	17.77	26.44

C.   Estimation of banks' enrichment due to float

Taking value of outstation cheques as 4% of total cheque value and interest rate for enrichment computation as 7% p.a., the average amount of banks' enrichment due to float, based on conservative estimates (for the period 2005-09), is Rs. 834 crore per annum. To

provide more appealing facts, a confidence interval estimate indicates that the amount of banks' enrichment due to float is between Rs. 727 crore and Rs. 940 crore per annum, and our being correct in making such a statement has probability 0.95.

Though there may be cheque clearing float, the above observations do not necessarily suggest that float funds are designed for monetary incentive. Though eventually, the banks' gain could be translated in monetary terms, such clearing float may actually be due to inefficiencies in banks, inefficiencies in the Indian postal/mail services and tolerance for delays from customers. Based on the above it is felt that, in the interest of India's cheque payment systems, the estimation of float (and the sample data collection as suggested) could be incorporated as part of a regular supervision checklist.

D.   Estimation of parameters for cheques cleared between metros

With respect to bank type, the following table summarizes the scenario for float, collection time, proportion of cheques cleared with 7 days and within 10 days. This is based on the 82 cheques cleared between New Delhi, Mumbai and Kolkata.

Bank Type	Float (Days)	Time (Days)	Proportion cleared within 7 days	Proportion cleared within 10 days	Sample Cheques	%
Foreign and Private Banks	2.33	8.48	8/27 = 0.30	23/27 = 0.85	27	32.93
Public Sector Banks	7.53	17.98	9/55 = 0.16	13/55 = 0.24	55	67.07
All	5.82	14.85	17/82 = 0.21	36/82 = 0.44	82	100

The results in the table clearly indicate that more than 60% of the cheques cleared between the metros take more than 10 days. Also, less than 20% of the cheques cleared between the metros take 7 or less days.

Though speed clearing is a feasible solution without any additional resources (except a change in mindset of the banks), unfortunately, changing such a mindset may have some sort of tradeoff in terms of revenue loss. Based on the 2009 sample study, only 3 out of the 38 outstation cheques got processed under speed clearing. This is so inspite of there being 29 (out of 38) cheques that were cleared between metros. Note that when cheques are processed under speed clearing, the banks are not imposing a collection charge since they simply follow the local clearing process. This appears to be a possible deterrent for revenue earnings of the banks. Under core banking scenario, technologically there is no difference between speed clearing and clearing a local cheque. In fact speed clearing is a more meaningful solution than to print "at par cheques" applicable between specific cities. RBI may like to make it mandatory for all cheques cleared between high cheque activity cities involving the four metros, Ahmedabad, Bangalore and Hyderabad to go under speed clearing. Subsequently, other cities can be brought under mandatory speed clearing.

E.   Immediate credit—A myth

The concept of immediate credit of up to a certain amount of the cheque (for next day withdrawal) is a Federal Reserve regulation in USA. However, in India somehow, in spite of RBI regulations, this concept has more or less remained only on paper for the past 30 years. It is felt that there is a need to look on a regular basis the all India percentage of satisfactorily operated accounts and the percentage of cheques of less than or equal to Rs. 15,000 that were afforded immediate credit. This would reflect facts leading to clearer perspectives.

F.   International scenario and benchmarking standards

Worldwide, cheque usage may be falling and the rate of decline is accelerating as faster and more efficient methods of payments gain popularity. The rate of decline may well accelerate in coming years as newer electronic payments are introduced. Notwithstanding this declining usage, there has been some pressure for changes to the timetable for clearing cheques, a timetable which may have remained unaltered for many years. This is because cheques still play an important role for certain groups of users, such as small and medium sized enterprises, and for certain types of payment.

The world scenarios, as also elaborated in Report [6], are more in for proper regulations on benchmarking standards in case of cheque collections. Cheque Clearing for the 21st century (Check 21) of USA is at par with India's cheque truncation project. Though Check 21 is operational in USA, which was passed into a law way back in October 2003, it did not prompt them to withdraw the benchmark regulations on time frame and interest payments on cheques in the country. Incidentally, subsequent to our Report, in November 2006, the Office of Fair Trading, UK, came out with key proposals on benchmarking cheque collections. These reforms have taken effect in UK from November 2007 and will improve all users' experience of the cheque clearing system, particularly vulnerable consumers, basic bank account holders and small businesses. This fact along with the long-standing standards in USA adds to our contention on need for benchmarking cheque collection standards in India. Thus, we can say that, contrary to RBI's deregulation reasoning, in most countries, rather than banks, it is the regulatory framework which develops the policy relating to collection of cheques. Incidentally the NCDRC and subsequently the RBI, finding it prudent to set appropriate standards, has recently benchmarked the time frame for cheque collections.

The present paper is based on few practical data that we have come across. It might be worthwhile to take-up a more comprehensive study- but that would require an active involvement of the Reserve Bank of India and other institutions concerned.

1. Introduction

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This paper is organized in seven sections. In Section 2 we introduce the issue of float, while in Section 3 we provide a technique, involving a sampling strategy, for estimation of cheque float and banks' enrichment due to float. A detailed analysis of the estimates for float and collection time of outstation cheques is given in Section 4. Next, Section 5 deliberates on estimation of banks' enrichment due to float. In August 2007, a preliminary draft report on the present study was circulated among few select organizations to assess the merits and de-merits of the study. Section 6 provides a rejoinder to the draft report. Finally, in Section 7 we make some concluding remarks.

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[1] *The remarks made by NCDRC are available in the public domain under NCDRC's Judgements-link on its home page [2]. The response of RBI to the NCDRC is also available on RBI's home page [1].*

2. The float- an introduction

At the outset we would like to mention that the sub-section on '*Need for introduction of polices to curtail bank's enjoyment of float*' of the Report [6] had emphasized the need to remove any kind of possible float[2]. However, due to the sentiments created by media, the value of float enrichment of Rs. 621 crore (mentioned there) had been focused at disproportionate levels. The focus of the work there was not how much float banks were enjoying but, among several other important issues, the fact that banks were enjoying float either by design or by chance. However, the debate on the figure of Rs. 621 crore does bring in important questions of academic interest. What should be a good estimate of the enrichment due to float? How can we estimate it?

In what follows we concentrate on working towards achieving a method to estimate the enrichment due to float. However, the method would need inputs for certain parameters in order to arrive at correct float enrichment figures.

We could derive several of such inputs from the RBI's response [1] to NCDRC. RBI has said and we quote:

"At the outset, I most respectfully submit that the complaint is based on imaginary and assumed figures. I submit that the allegation of float and interest derived to the extent of Rs. 621 crores is far from being correct and grossly exaggerated and wrongly assumed. It is further submitted that the figures given in Das and Das report are not the Bank's figures, but reflect the personal study carried out by them, which the Bank does not admit....
Within the local clearing segment – there are two sub segments – High Value Clearing and Main Clearing. For local cheques processed under "High Value Clearing" which accounts for almost 50 percent of the value of the cheques, the scope for 'float' is nil – because the cheque is cleared by the end of the day and customer's account gets credited on the same day on which the cheque is presented. In the Main Clearing segment also, the scope for float is very remote.
On a rough estimate, not more than 0.5% of the volume and 2% of the value of the cheques are outstation cheques. From the above data, it is respectfully submitted that the value of cheques where there is some scope for delay in credit occurring is minimal. I further submit that the term "float" as it is understood in the banking usage, refers to the benefit derived by a bank by realization of the proceed but not passing on that benefit to the payee."

The inputs that we get from above are:

a) Value of cheques under "high-value clearing" in percentage (HV) is almost 50
b) Number of outstation cheques in percentage (ON) is roughly 0.5
c) Value of outstation cheques in percentage (OV) is roughly 2

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[2] The Report [6] mentions *"The need for passing due interest benefits to payees on their cheque proceeds once the payees' bank (and not payees' account) receives credit from the drawee bank is of significant consequence. Not passing of such interest benefits to the customers allows the banks to enjoy float and leads to undue enrichment of banks at the cost of their customers. Presently, as per data available (see Appendix C), in one year nearly 13,000 lakh cheques are cleared attributing to a total amount of more than Rs. 1,13,37,000 crores. Giving benefit of doubt to banks and **considering that for at most** 50% of the cheques banks are not enjoying any kind of float, it would mean that **on an average** the banking sector enriches itself (at the cost of its customers) **to the tune of at least** one days interest on at least Rs. 56,68,500 crores. And this one-day's interest, **even at a conservative rate of interest** of 4% per annum, amounts to more than Rs. 621 crores. In fact the empirical study presented in Section 5 indicates that, on an average, the float enjoyed by banks is 4 and 6 days (while they take 11 and 16 days for collecting cheques) for metro and state capital respectively. For other centres it would be anybody's guess what the float period could be!"* The bold words convey what the float enrichment would look like provided what is assumed is correct.

d) The definition of float, as understood in banking usage, is 'the benefit derived by a bank by realization of proceeds but not passing on that benefit to the payee'.

e) The existence of float is not ruled out though there is difficulty in quantifying them.

We now discuss each of the above inputs.

1) HV:

The data on number and value of high-value clearing is provided in Table 8.1 of the RBI Annual Report 2005-06 (see reference [9]). Under high-value clearing, in the year 2005-06, the number is 187.48 lakh and the value is Rs. 49,75,477 crore. Also, for the year 2005-06, the total value of cheques, as per reference [7], is Rs. 1,13,37,062 crore. Thus, (with HV referring to percentage of total value of cheques cleared under high-value clearing) HV is in fact 43.89, i.e., almost 44% of the value of the cheques (much lower than the expected 50% number). For the year 2006-07, the total value of cheques is Rs. 1,20,56,100 crore and out of this, the total value under high value clearing is Rs. 50,34,007 (see references [22], [23]). Thus, HV in 2006-07 is 41.75. Similarly, for the years 2007-08 (2008-09), the total value of cheques is Rs. 1,33,96,066 crore (Rs. 1,24,61,202) and out of this, the total value under high value clearing is Rs. 55,00,018 (Rs. 45,50,667) (see references [26], [27], [28], [29]). Thus, HV in 2007-08 and 2008-09 are 41.06 and 36.52, respectively.

2) ON and OV:

With ON (OV) referring to percentage of total number (value) of outstation cheques, their values indicated by RBI are ON = 0.5 and OV = 2. However, these numbers may not include the cheques which a bank 'A' presents locally (to a clearing house) after receiving it either directly from an outstation branch of the same bank 'A' or through some correspondent bank. Just because a cheque is being locally presented by a bank, in a clearing house, may not necessarily mean it belongs to the category of local cheques. It may as well be an outstation cheque. As such, the clearing house does not capture the payee's bank-branch (or bank-city) code. However, through RBI's inter-city clearing facility, it is possible to captures two-way (one-way) inter-city clearing information only between 10 (5) centers. Thus it is not easy to determine the exact value of ON and OV through the clearing house database. However, even if OV is only 2, it leads to an yearly average figure of Rs. 267921.32 crore (based on 2007-08 data [26]). Thus, as per RBI, every year there is scope/possibility for delay (or float) on a total cheque value of Rs. 2.68 lakh crore.

On a careful examination of the cheque collection policies framed by banks, it can be noticed that almost all of them implicitly mention about sending the outstation cheques directly (or through their correspondent banks) to the outstation centers where they are presented for local clearing. This fact is also endorsed in IBA's model policy on collection of cheques (see reference [18]). Thus the data on such outstation cheques would get captured in clearing houses as a local cheque and not as an outstation cheque. On the other hand, some of the CBS enabled banks may be currently accepting (from customers and banks) cheques drawn on their outstation locations and internally processing such cheques without going through a clearing house. In case the ON and OV figures are derived from data on inter-city clearing facility of clearing houses then it could be a gross underestimate. An impressionistic assessment based on interaction with several bank branches lead us to believe that ON was close to 2 rather than 0.5. More plausible estimates on ON and OV could be derived based on data on outstation cheques from bank branches or from service branch of banks rather than from clearing house alone.

Finally, note that even though RBI's estimates for ON and OV may have been based solely on inter-city clearing house data, the estimate of the ratio OV/ON (i.e., population ratio of % value to % number of outstation cheques, and henceforth referred to as PR) is not expected to be affected by it. Thus, OV/ON = 2/0.5 = 4 can be taken as a good estimate for PR. Note that PR represents the average amount of outstation cheques vis-à-vis average amount of all cheques (outstation and local) since

$$PR = \frac{OV}{ON} = \frac{OV_1/TV}{ON_1/TN} = \frac{OV_1/ON_1}{TV/TN} = \frac{\text{Average amount of outstation cheques}}{\text{Average amount of all cheques}},$$

where, TV (OV_1) and TN (ON_1) are total (outstation) value and number of cheques respectively. Thus PR = 4 implies that the average amount of outstation cheques is four times the average amount of all cheques.

3) Definition of float:
We would retain our definition of **float in terms of days** which has a narrower connotation. *We define float as the time (days) taken to credit the depositor's account after the drawee's account has been debited.* The collection time, on the other hand, corresponds to the duration between deposit and credit dates in the payee's account. In contrast, RBI's definition of float is in monetary terms and is defined as the benefit derived by a bank by realization of the proceeds but not passing on that benefit to the payee. Thus, an alternative definition of float may be taken as the enrichment (or benefit) derived by banks on account of the float period.

These definitions for enrichment due to float are rather conservative due to the fact that (i) even though a bank may credit a savings account the day there is a debit on the corresponding drawee's account, it may not value date the funds for the same date, and (ii) the bank does not give access to the funds for a minimum of one day (overnight for cheques under high-value clearing) even though the bank may credit the account.

In 2007-08, the total value of cheques was Rs. 1,33,96,066 crore, and the average daily cheque transactions was of the order of Rs. 44,654 crore (based on 300 days of activity in a clearing house during 2007-08), which is 25% of the statutory Cash Reserve Ratio[3] (CRR). However, the banks use this much of funds every working day for balancing their current accounts with RBI, maintaining their statutory reserves and for trading in different markets.

4) Period of float:
We need to quantify the adjectives "remote" and "minimal" used by RBI for the period of float. In order to arrive at meaningful estimates on float period, one has to carry out a sample study. Also, the float period is an important factor in determining the amount of enrichment derived by banks due to float.

Before closing this section, for completeness, we refer to Appendix A, where the cheque clearing process is explained in brief (also see references [1], [8]).

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[3] Total CRR to be maintained in the Indian economy by the Scheduled Commercial Banks is of the order of Rs. 180,000 crore, being 5% of the net demand and time liabilities (NDTL).

3. A technique for estimating enrichment due to float

In this section we provide a technique, involving a sampling strategy, for estimation of cheque float and banks' enrichment due to float. The parameters involved in the estimation of the amount of enrichment due to float (EF) can be obtained using the following basic steps.

1. Obtain frequency distribution for cheque amounts and bank-wise distribution of total number and total value of cheques deposited (cheques for outward clearing).
2. Identify the banks to be considered in sample study (few banks that cover large volumes).
3. Use sampling for estimating percentage value of outstation cheques.
4. Use sampling for estimating average of local and average of outstation cheque float.
5. Identify the rate of interest for enrichment computation.

Steps 1-2 require standard data crunching of cheque clearing data already available with RBI in an electronic form, while Steps 3-4 require a small retrospective observational study. Following these steps one can obtain the value of outstation cheques in percentage (OV), local cheque float in days (LF) and outstation cheque float in days (OF). We provide the details of the sampling strategy (Steps 1 through 4) in Appendix B.

We would like to reiterate here that, in order to get adequate evidence, a conclusive sample study involving Steps 3-4 is required. Such a research project may be taken up by the guardian of the payment systems, as the resources they have to carry out such a study may not be available to others. Cheque clearing data, provided in Appendix C, suggests that one should initiate the survey, involving Steps 3-4, only at Mumbai and Delhi since both these centers together account for a major volume of cheque transactions. However, it may be desirable (subject to resource availability) to carry out the exercise at a few other centers too.

As an alternative to the strategy suggested in Steps 3-4, one can also consider depositing experimental cheques across banks in order to generate the required data. We adopt this alternative approach here, details of which are given in Section 4. Such experiments can also be carried out by any independent research organization.

In the estimation for local cheque float, experimental local cheques of one bank are issued and deposited in other banks. By capturing information on debit and credit dates of the cheques, the difference in the credit and debit dates would contribute to our estimate for the float days in local cheque for each bank in our sample. Average of these values would then provide an overall estimate of the non high-value local cheque float (LF). Similarly, one estimates the outstation cheque float (OF) by using experimental outstation cheques.

Step 5: Identifying the interest rate for enrichment computation: An important component, to calculate the possible enrichment of banks due to float, is the rate of interest. Though float exists, we acknowledge the fact that this, by and large, reflects the systemic inefficiency and not necessarily the banks' intention to use the funds gainfully and detrimentally to the interest of the depositors. However, if we need to work out how the banks could have deployed these funds gainfully or how much the depositors could have benefited had float not existed, we need to pick up an indicative return on such float funds. In absence of a reason to choose a particular rate of interest over the other, we present scenarios that consider the following rates of interest: Savings deposit, Fixed deposit(FD), Lending rates, Bank rate, Repo/Reverse Repo rate and Overnight and other call money market rates.

It may be mentioned that in choosing the above rates, we have intentionally not considered other loss/inconvenience to depositor in presence of float, e.g. getting FD rate of interest from an earlier date if the customer was awaiting proceeds for making an FD; loss to a current account holder who has to resort to overdraft due to delay in getting clear funds; the banks' crediting funds but not allowing depositor's access to the same; etc.

On the other hand, the above rates correlate well for measuring the monetary comfort (and thus benefit) that could be gained by banks through use of the funds for reserve requirements and treasury operations. This gain may be measured in terms of the overnight and other call money market rates. All these together lead us to the need for an interest rate for enrichment computation. We denote such an interest rate by IN.

For ready reference, we now provide a list of abbreviations that has been described above. Some of these are used for computing enrichment due to float.

TV-   Total value of cheques in Rs. crore
TN-   Total number of cheques
HV-   Value of cheques under "high-value clearing" in percentage
ON-   Number of outstation cheques in percentage
OV-   Value of outstation cheques in percentage
PR-   Ratio of % value of outstation to % number of outstation (i.e., OV/ON)
LF-   Average local cheque float in days
OF-   Average outstation cheque float in days
IN-   Interest % p.a. for enrichment computation
EF-   Amount of enrichment due to float

It may not be easy to quickly arrive at the value for EF. However, a good estimate can be arrived at by using the data already available and by carrying out a sample study.

From above discussions, we can thus arrive at the enrichment derived by banks due to float (EF), as a function of the four parameters LF, OF, OV and IN. The EF in Rs. crore is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000}.$$

4. Estimation of float and collection time

In order to understand ground realities of the cheque collection process, an initial empirical study was carried out during second half of 2006. A small experiment was designed wherein a few banks in Delhi were taken (having representation from the public, private and foreign banks). Cheques from Kolkata, Ranchi and Hyderabad were procured and deposited at the banks in Delhi. Also a cheque of New Delhi was deposited in Hyderabad. In addition, some local cheques of Delhi were deposited across banks. Statistics were then obtained on the credit and debit dates for each cheque deposited, where debit date corresponds to debit in the drawee's account. After carefully reconnoitring the data obtained from our experiment, we present in Table 1 of Appendix D the details of our sample consisting of 23 outstation cheques. Based on such a sample, the simple averages for outstation cheque float (where float could be recognized) and collection time are 5.81 and 13.87 days respectively.

Subsequent to the initial experiment, in order to get more precise estimates, a second round of data was generated involving additional 21 outstation cheques. This empirical study was carried out during first half of 2007. Again, in the experiment, a few banks in Delhi were taken and cheques from Kolkata, Ranchi and Mumbai were procured and deposited at the banks in Delhi. As earlier, statistics were obtained on the credit and debit dates for each cheque deposited. We present in Table 2 of Appendix D details of our sample consisting of 21 outstation cheques. Based on the combined sample of 23+21=44 cheques, the simple averages for outstation cheque float and collection time are 6.60 and 13.86 days respectively.

Subsequent to the above two rounds, a draft report was prepared in August 2007 providing results of the 2006 round involving only 23 cheques. This draft report was sent to RBI for vetting and one of the major concerns raised was the sample size. In order to address the concern we carried out a third round of the experiment during first half of 2008 and data was generated involving an additional 62 outstation cheques. This time bank branches in Mumbai, Delhi, Hyderabad, Kolkata and Ranchi were considered for depositing the outstation cheques. Cheques from Rajkot, Kolkata, New Delhi, Mumbai, Hyderabad and Ranchi were procured and deposited at the outstation bank branches. As earlier, statistics were obtained on the credit and debit dates for each cheque deposited. The Table 3 of Appendix D presents the details of our sample consisting of 62 outstation cheques. Based on the combined sample of 23+21+62=106 cheques, the simple averages for outstation cheque float and collection time are 7.01 and 17.54 days respectively.

Finally, a fourth round of the experiment was carried out during first half of 2009 and data was generated involving an additional 47 outstation cheques. The Table 4 of Appendix D presents the details of the sample consisting of 47 outstation cheques. Finally, based on the combined sample of 23+21+62+47=153 cheques, the simple averages for outstation cheque float and collection time are 8.23 and 18.79 days respectively. However, one may note that unlike previous three rounds, in this round we have taken 9 cheques which were drawn at locations other than metros or state capitals. Without considering these 9 cheques, our sample size in the fourth round would be 38 and the combined sample would consist of 144 cheques. For these 144 cheques, the simple averages for outstation cheque float and collection time are 6.76 and 17.08 days respectively. For consistency, we henceforth work with such a sample of 144 cheques drawn on outstation metros or state capitals.

A closer look at the sample outstation cheque data indicates higher float values and collection time for bigger banks. Thus, a weighted average is expected to give higher values for sample

average float and collection time for outstation cheques. In the absence of data related to Step 1 of the sampling strategy, we are unable to derive the weights. However, one can reasonably use the percentage of total number of accounts/offices or total amount outstanding/deposits for each bank group (or banks) to represent the percentage of the cheque values deposited in the bank groups. Such percentages when used as weights for our sample banks would provide a more reasonable weighted mean. This would provide a better estimate of average float days than taking merely the simple mean.

In what follows, we make certain inference on average float days and average collection time for outstation cheques. What can one say about a population parameter (e.g., mean float days for all the cheques in 2005-06 or 2005-07 or 2005-08 or 2005-09) based on sample data? One way to answer such a question is to use statistical inference, a technique that converts the information from random samples into reliable estimates of, and conclusions about, the population parameter. Based on our empirical experiment, leading to a random sample of cheques, we can make a statistical inference that involves generalizing from the sample to the population from which it was selected. The population (random) variable under study is the number of float days for outstation cheques. Let X denote such a random variable. Here, our population consists of all the outstation cheques. The results that follow are based on the assumption that X very closely follows a normal distribution with unknown mean μ and unknown variance σ^2. A validity of the normality assumption is provided by a normal probability Q-Q plot of the sample values revealing sufficient closeness of the plotted points to a straight line.

In general, for a random sample (from a normally distributed population with unknown mean μ and unknown variance σ^2) of size n, say $x_1, x_2,\ldots, x_n$, with sample mean and sample variance being $\bar{x}$ and s^2 respectively, the random variable

$$t = \frac{\bar{x} - \mu}{s / \sqrt{n}}$$

has a t-distribution with n-1 degrees of freedom.

Furthermore, with $\bar{x}$ and s as the sample mean and sample standard deviation of a random sample from a normally distributed population with unknown variance σ^2, a 100(1-α) % confidence interval for μ is given by

$$\bar{x} - t_{\alpha/2,n-1}s / \sqrt{n} \leq \mu \leq \bar{x} + t_{\alpha/2,n-1}s / \sqrt{n},$$

where $t_{\alpha/2,n-1}$ is the upper 100α/2 percentage point of the t-distribution with n-1 degrees of freedom.

Finally, a 100(1-α) % confidence interval for $a\mu+b$, where a and b are constants, is given by

$$a(\bar{x} - t_{\alpha/2,n-1}s / \sqrt{n})+b \leq a\mu+b \leq a(\bar{x} + t_{\alpha/2,n-1}s / \sqrt{n})+b.$$

In what follows, an estimation exercise has been carried out in an iterative fashion using data of Tables 1, 2, 3 and 4 (Appendix D). First we derive results based on the initial dataset of 23

cheques (Table 1) and then follow it by using the extended and combined dataset of 23+21=44 cheques (Tables 1 and 2), 23+21+62=106 cheques (Tables 1, 2 and 3) and 23+21+62+38=144 cheques (Tables 1, 2, 3 and 4). While estimating the mean float days and collection time, a question may arise whether the chosen sample is random. An honest answer is no. There exists a selection bias in the sense that the sample constitutes float days arrived for cheques cleared between metros or between a metro and state capital. Thus, our estimate based on such a sample is bound to provide an underestimate of the true mean value of μ. We keep this fact in mind but do not use it in any way. Thus, the estimates that follow are still conservative estimates of float and collection time.

Estimation of float (outstation cheques)

The exercise on float time has been done in an iterative fashion using data of Tables 1, 2, 3 and 4. The details of the exercise are provided in Appendix D. A summary of the results for the four scenarios across different time periods are presented in the table below.

The float (days) for outstation cheques have been increasing over the study period. It increased from 5.8 days in 2005-06 to 6.8 days in the period 2005-09.

Summary Table (float days)	2005-06 n = 21	2005-07 n = 35	2005-08 n = 95	2005-09 n = 133
Sample mean	5.81	6.60	7.01	6.76
95% Confidence interval of mean	(4.30, 7.32)	(4.83, 8.37)	(5.66, 8.36)	(5.63, 7.89)
95% lower-confidence bound for μ	4.56	5.13	5.88	5.81

It can be seen that the average number of float days for outstation cheques have been increasing over the study period. It increased from a little less than six days in 2005-06 to about seven days in the four year period 2005-09.

Estimation of collection time (outstation cheques)

Now we change gears a bit and focus on the time taken for collection of outstation cheques. In connection with the collection time, in RBI's response [1] to NCDRC, RBI has said and we quote,

"4.3 As per the feedback received from various clearing houses, time taken for clearing of local cheques is 3 days (including the day of presentment of the cheque). In some instances, where the branches are covered in clearing houses such as New Delhi or Greater Mumbai, but are physically located at far-off places, this process of local clearing takes one extra day. For outstation cheques, it takes 5 days to 10 days on an average. Average time taken is a little longer for locations in North-Eastern states and Jammu & Kashmir."

It may be noted that the clearing houses do not have information on the actual credit dates (and value dates) that is being given by the collecting banks while crediting the customers' accounts with the funds passed on by the clearing house to the collecting bank. The clearing house would need to carry out an independent survey in order to provide concrete feedbacks on actual clearing time. As for outstation cheques, our results indicate that 5 to 10 days as average time for collection would be a underestimate of the true collection time.

The exercise on collection time has also been done in an iterative fashion using data of Tables 1, 2, 3 and 4. Details are provided in Appendix D. A summary of the results for the four scenarios are presented in the table below.

The average collection time for outstation cheques has increased in the study period from a little less than 14 days to 17.1 days.

Summary Table (collection time)	2005-06 n = 23	2005-07 n = 44	2005-08 n = 106	2005-09 n = 144
Sample mean	13.87	13.86	17.54	17.08
95% Confidence interval of mean	(10.47, 17.27)	(10.99, 16.74)	(15.16, 19.91)	(15.13, 19.03)
95% lower-confidence bound for μ	11.06	11.47	15.55	15.44

In view of the fact that our sample constitutes outstation cheques involving only metros and state capitals, the average collection time between two metros or between a metro and state capital appears to be substantially greater than 7-10 days.

The average collection time for realization of proceeds after depositing an outstation cheque has also increased in the study period from a little less than 14 days in 2005-06 to 17.1 days in the four year period 2005-09.

Estimation of proportion of outstation cheques in the population that takes at most 10 days to clear

Let π be the proportion of outstation cheques in the population that take at most 10 days to clear. In what follows, we estimate π. Let Z be a variable indicating the number of cheques cleared within 10 days. Then for a given number of cheques n, Z follows a binomial distribution with parameters n and π. A point estimate of π is $p = z/n$ where z is the realized value of Z. A summary of the point estimates and the confidence intervals for π, for the four scenarios, are presented in the table below. Details are provided in Appendix D.

Summary Table (estimate of π^*)	n = 23	n = 44	n = 106	n = 144
Sample proportion	0.261	0.318	0.330	0.354
95% Clopper and Pearson interval	(0.102, 0.484)	(0.186, 0.476)	(0.242, 0.428)	(0.276, 0.438)
95% Wilson interval	(0.125, 0.465)	(0.120, 0.466)	(0.248, 0.424)	(0.281, 0.435)
95% upper-confidence bound	0.451	0.452	0.413	0.425

π is the proportion of outstation cheques that take at most 10 days to clear

Thus, even though there has been an improvement over recent years, our random sample indicates that on an average only one in three cheques get cleared within 10 days.

Bootstrap analysis

The analysis carried out above, assumes that X (float period) (and Y (collection time)) very closely follow a normal distribution with mean μ and variance σ^2. This has led us to the sampling distribution of $\bar{x}$ to be normal with standard error $\sigma/\sqrt{n}$. An estimate of the

standard error (SE) of $\bar{x}$ is $s/\sqrt{n}$. Even when X does not follow a normal distribution (which, in the present case, one may argue since X is actually a discrete variable and takes only non-negative values), central limit theorem tells us that $\bar{x}$ would still follow a normal distribution for n sufficiently large (usually 30 or more). Also, to see the effects of truncation at zero Borowiak and Das (2009) have carried out sensitivity analysis of t (or $\bar{x}$) when X follows a left truncated normal distribution and showed that t is quite robust against such truncations. However, in order to remove any doubts on the validity of our assumptions, we carry out a bootstrap analysis.

The bootstrap is a resampling method for statistical inference. It is commonly used to estimate confidence intervals, but it can also be used to estimate bias and variance of an estimator or calibrate hypothesis tests. Efron (1979) introduced Bootstrap methods for such estimation problems. Bootstrapping is a powerful technique wherein the sampling distribution of $\bar{x}$ can be obtained without any knowledge of the exact distribution of X. Through bootstrapping we obtain the standard error of $\bar{x}$, a 95% confidence interval for population mean μ and carry out bootstrap tests of hypothesis. Moreover, through bootstrapping we would not only be able to study the population mean but also the population median. Estimation of the population median would allow us to reduce the effects of outlying population values.

Outline of the Bootstrap Method (see reference [14])

1. Obtain a random sample of size n from a population or process.
2. Generate a random sample of size n, with replacement, from the original sample in step 1.
3. Calculate a statistic of interest for the sample in step 2.
4. Repeat steps 2 and 3 a large number of times to form the approximate sampling distribution of the statistic.

Bootstrap Intervals

Based on one lakh resamples on each of the data sets (the float data and the collection time data) one would arrive at the following statistics.

Bootstrap results	Estimation of float				Estimation of collection time			
Case	n = 21	n = 35	n = 95	n = 133	n = 23	n = 44	n = 106	n = 144
95% CI of mean	(4.43, 7.19)	(5.11, 8.46)	(5.76, 8.41)	(5.69, 7.92)	(11.13, 17.35)	(11.25, 16.75)	(15.28, 19.96)	(15.22, 19.06)
Mean of means	5.81	6.60	7.01	6.76	13.87	13.87	17.54	17.08
SE of mean	0.71	0.86	0.68	0.57	1.61	1.41	1.19	0.98
95% CI of median	(3,7)	(4,7)	(5,7)	(4,6)	(11,15)	(11,14.5)	(12,17)	(12,17)
Mean of median	5.91	6.11	5.81	5.33	12.65	12.76	13.67	13.86
SE of median	0.88	0.59	0.55	0.74	1.07	0.89	1.24	1.32

From above it is seen that generally the median values are smaller than the mean values. This is so since there are some outlying large values for float and collection time. The above bootstrap results and its analysis support the findings made earlier.

5. Estimation of banks' enrichment due to float

In this section we estimate the enrichment due to float for different time periods under study, that is, for the year 2005-06, followed by the period 2005-07, 2005-08 and 2005-09. The full details of this workout are provided in Appendix E.

An enrichment of Rs. 834 crore per year due to float is estimated based on the experiment conducted during 2005-09.

We had arrived at enrichment due to float (EF) as a function of the four parameters LF, OF, OV and IN in Section 3. The EF in Rs. crore is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000}.$$

For calculating the above, we already have the information on TV and HV for individual years and in Appendix E, we calculate these for the four periods under study. The values of LF have been arrived as discussed in Appendix E. The value of OF have been derived based on the experiment conducted for this project. The values are summarised as under.

Period	TV	HV	LF	OF	95% Confidence Interval for μ
2005-06	11337062	43.89	0.250	5.81	(4.30, 7.32)
2005-07	11692617	42.83	0.225	6.60	(4.83, 8.37)
2005-08	12255875	42.20	0.200	7.01	(5.66, 8.36)
2005-09	12307207	40.76	0.150	6.76	(5.63, 7.89)

We also know that OV = ON × PR and the value of PR, as discussed in Section 2, is 4.

Thus for the four different periods as above, we can now work out average annual EF for different combinations of ON and IN. We denote such point estimate of EF by $EF_{(ON,IN)}$. Further, in order to provide an indicator of efficiency of the above point estimate, we give a 95% confidence interval for the true annual EF.

Denoting true annual EF by EF_0, we can write $EF_0 = a\,\mu + b$, where $a =$ TV×IN×OV/3650000, $b =$ TV×IN×(100-HV-OV)×LF/3650000 and μ is the population mean of the number of float days for outstations cheques.

Thus, for 2005-06, using the 95% confidence interval for μ, obtained in Section 4, a 95% confidence interval for EF_0 is $(4.30a + b, 7.32a + b)$. Similarly for 2005-07, 2005-08 and 2005-09, the respective 95% confidence interval for EF_0 are $(4.83a + b, 8.37a + b)$, $(5.66a + b, 8.36a + b)$ and $(5.63a + b, 7.89a + b)$. The 95% confidence interval for EF_0 is provided below for various combination values of ON and IN.

From the different scenarios presented in the table below, it can be seen that even if we take a very conservative estimate by taking the number of outstation cheques as 0.5% of total cheques and use 4% rate of interest for enrichment computation and assume that for 85% of the local cheques in 2005-09 there was no float, then also we get an average annual enrichment amount of Rs. 298 crore. A middle path assuming that 1% of the cheques are

outstation and 7% is the rate of interest earned on it, we get an enrichment amount of Rs. 834 crore per year based on the experimental data of 2005-09.

(Rs. Crore)

ON	IN	2005-06 (LF=0.25)			2005-07 (LF=0.225)			2005-08 (LF=0.20)			2005-09 (LF=0.15)		
		$EF_{(ON,IN)}$	95% confidence limits for EF_0		$EF_{(ON,IN)}$	95% confidence limits for EF_0		$EF_{(ON,IN)}$	95% confidence limits for EF_0		$EF_{(ON,IN)}$	95% confidence limits for EF_0	
0.5	4	312	275	350	328	283	374	338	302	374	298	268	329
0.5	7	547	481	612	574	495	654	529	528	655	522	468	575
0.5	9	703	619	787	738	636	841	761	679	843	671	602	739
1	4	451	376	526	492	401	582	521	449	594	476	415	537
1	7	789	657	920	860	702	1019	912	785	1039	834	727	940
1	9	1014	845	1183	1106	902	1310	1173	1009	1336	1072	935	1209
2	4	727	577	877	818	637	1000	887	742	1032	833	711	955
2	7	1272	1009	1535	1432	1115	1750	1552	1298	1806	1458	1244	1671
2	9	1636	1298	1973	1841	1433	2249	1996	1669	2322	1874	1600	2149

We would like to add here that in case, for a cheque presented under high-value clearing, the customer's account is not credited the same day on which the cheque is presented but credited the next day, it would add to float. For every 0.01 days of such high-value cheque float, with IN = 9%, the contribution to annual float enrichments would be Rs. 12.75 crore. In our above computation for EF we have taken such contributions as zero.

Before we conclude this section, just for more curious minds, we present the result for the period 2005-09 where we consider zero local float, i.e., LF=0. This gives the following point and interval estimates for the average annual EF based on the four years 2005-09 (taking different combination of values for ON and IN).

(Rs. Crore)

ON	IN	2005-09 (LF=0)		
		$EF_{(ON,IN)}$	95% confidence limits for EF_0	
0.5	4	182	152	213
0.5	7	319	266	372
0.5	9	410	342	479
1	4	365	304	426
1	7	638	532	745
1	9	821	683	958
2	4	729	607	851
2	7	1276	1063	1490
2	9	1641	1367	1915

An enrichment due to float works out to Rs. 638 crore even if no local float is assumed, taking that the number of outstation cheques are 1% of the total cheques and an indicative rate of return of 7%.

It is interesting to highlight from the table above that even if we assume that there exists no local float, expect that only 1 per cent of all cheques in number are outstation cheques and take an indicative 7 per cent rate of interest based on the prevailing rates during the four year period, the average annual enrichment due to float works out to Rs. 638 crore and a 95% confidence interval of this estimate is Rs. 532 to Rs. 745 crore.

A component of enrichment by banks (at the cost of depositors), not covered in float enrichment, was pointed out explicitly by the Tarapore committee in their Report [5] and

further reiterated in our Report [6]. This enrichment is due to non-compliance by banks in providing the facility of Immediate Credit of Local/Outstation cheques to small depositors. In order to have some idea on the number of small depositors or the number of cheques with value less than Rs. 15,000 during the period 2005-09, one needs to look at the frequency distribution of the non high-value cheque amounts.

In Report [6] we have discussed the international scenario on cheque collections. In this connection, it may be noteworthy to see a November 2006 Cheques Working Group Report [3] issued by the Payment Systems Task Force, chaired by the Office of Fair Trading (OFT), UK. The Task Force was established following an announcement by the Chancellor in his pre-Budget Report of November 2003 that the OFT would play an enhanced role in payment systems. Going through the full OFT Report one can find their in-depth analysis. All these reforms has taken effect from November 2007 and will thus improve all users' experience of the cheque clearing system, particularly vulnerable consumers, basic bank account holders and small businesses.

The OFT Report indicates that cheque usage may be falling and the rate of decline is accelerating as faster and more efficient payments gain popularity. The rate of decline may well accelerate in coming years as faster electronic payments are introduced. Notwithstanding this declining usage, there has been some pressure for changes to the timetable for clearing cheques, a timetable which has remained unaltered for many years. This is because cheques still play an important role for certain groups of users, such as small and medium sized enterprises (SMEs), and for certain types of payment.

We would also like to add that Cheque Clearing for the 21st century (Check 21) of USA is at par with India's cheque truncation project. Though Check 21 is operational in USA, which was passed into a law way back in October 2003, it did not prompt them to withdraw the benchmark regulations on time frame and interest payments on cheques in the country. This fact along with the recent OFT Report of UK adds to our contention on need for benchmarking cheque collection standards. Thus, we can say that, contrary to RBI's deregulation reasoning, in most countries, rather than banks, it is the regulatory framework which develops the policy relating to collection of cheques. For more on this and certain other issues related to policies on cheque collections, we refer to [19] and [31].

Incidentally the NCDRC and subsequently the RBI, finding it prudent to set appropriate standards, has recently issued the following directions (see Appendix I and reference [30]):

(a) For the local cheques credit and debit shall be given on the same day or at the most on the next day.
(b) The maximum period for collection of outstation cheques shall be 7/10/14 days. And, if there is any delay in collection of the said chques beyond the period of 7/10/14 days, interest at the fixed deposit rate, or at a specified rate as per the respective policy of the banks, is to be paid to the payee of the cheques;
(c) The salient features of the policy with regard to the collection period of outstation cheques and interest payable thereon in case of delay shall be published on the notice board in a precise manner in bold/visible letters at conspicuous place in every branch.
(d) A copy of the complete policy shall be made available by the Branch Manager, if the consumers require the same for reading.
(e) The salient features highlighting the rights of the consumers shall also be displayed on the notice board of each branch of the Banks.
(f) Needless to say that the RBI would monitor the directions given by it as well as this Commission.

6. Rejoinder to draft report

In August 2007, a preliminary draft report on the present study was circulated among few select organisations to assess the merits and de-merits of the study. In what follows, we present some of the key comments received and our response to such comments. The responses to other comments are presented in the Appendix G.

Key comments from the Reserve Bank of India (September 2007)

1. The study taken up is on a very important operation affecting the lives of people across the society.

2. Many of the conclusions drawn in the Report are based on a survey conducted, some aspects of which seem to weaken the basis of conclusions drawn in the report. The details are:

a) The study which has been used as a basis in the Report, for reaching the conclusions on float, time taken for collection of outstation cheques, and the enrichment enjoyed by banks has used a small sample of 23 outstation cheques.

b) The value of each of the 22 out of 23 cheques used in the study is Rs. 110 or below. One cheque is of Rs. 1055. The entire sample is of very low value cheques. This bias of a small sample of very low value cheques has not been appropriately factored in the Report.

c) The above points suggest that the clearing float may not be on account of a monetary incentive. It may be due to inefficiencies in banks, inefficiencies in the Indian postal/mail services and tolerance for delays from customers – purely from an economic perspective. These aspects may also need to be appropriately factored in the Report.

3. Notwithstanding the above, the Report has put across some very important proposals which may be worthy of consideration. It is felt that if the basis for the proposals is based on a wider and larger sample it would be fairly representative and would be useful for consideration by the Reserve Bank. We may even consider funding the proposed study through a larger group comprising of the authors of the present study, representatives of banks and RBI. Such a group will give the researchers access to a more authentic and representative database, which will help in drawing more useful and substantiated conclusions which may thereafter serve as an input for improving the cheque clearance systems in India. Such a study may also consider the delays, if any, in the local cheques and also the extent to which banks afford immediate credit for outstation cheques.

Comments from the Indian Banks' Association (September 2007)

To put the issue in perspective Indian Banks' Association (IBA) make the following observations.

1. Concept of immediate credit:

As you are aware, there was a regulatory mandate on immediate credit of collection instruments prior to November 2004. RBI had directed banks to give immediate credit on specified transactions as a customer service measure. It may be appreciated that the system of

immediate credit originated to help pensioners who received pensioner's cheques from Government Departments. In such cases banks never faced any credit risk. Subsequently the guidelines were liberalized gradually and banking system had come forward to increase monetary ceiling up to Rs, 15000/- (It was based on IBA advice that RBI had revised the limit).

2. International scenario and benchmark standard:

We had occasion to compare developments in our Payment and Settlement Systems with system prevalent in countries like UK and USA. In our view we have a robust Payment and Settlement system: RTGS and NEFT are more efficient than many other similar systems. Yes, there are gaps in the technology infrastructure especially in the area of last mile connectivity, straight through processing etc. Banks are in the process of improving their technology infrastructure.

3. IBA Model Policy and Policies adopted by individual banks:

The report has tried to benchmark the collection policies of banks with reference to the mandated regime in existence prior to November 2004. This may not be appropriate, as the earlier regime had not looked at collection service as a commercial service. The changes we have made in the policy are taking into account bank practices as well as ground level factors. It was the experience of banks in centers where clearing houses existed that customers rarely approached for immediate credit paying a fee for the same. Banks also face considerable delay when collection cheques have to be sent to interior centers where clearing facility is not available. Many a time, the regional paying banks may not be having drawing arrangements with banks at centers from where cheques are sent for collection. This also delays the process.

We however, would like to emphasize that banks never target floats while handling collection business. In fact, we foresee a situation where there would be no floats in almost all collection transactions in the near future. Banks would compete with each other for offering more efficient services.

Our response

The objective of the study is to arrive at a measure for calculating float and collection time. Such float occurs due to systemic inefficiency leading to enrichment of the banks at the cost of the masses who still find it convenient to use cheques as a mode of payment.

There is no doubt that our sample is not a random sample of all outstation cheques in India. To highlight this fact, the report mentions: "While estimating the mean float days and collection time, a question may arise whether the chosen sample is random. An honest answer is no. There exists a selection bias in the sense that the sample constitutes float days arrived for cheques cleared between metros or between a metro and state capital. Thus, our estimate based on such a sample is bound to provide an underestimate of the true mean value of μ. We keep this fact in mind but do not use it in any way. Thus, the estimates that follow are still conservative estimates of float and collection time."

As rightly pointed out, we too fully acknowledge the drawbacks of the pilot survey since (a) it is based on a very small sample (b) the sample frame is restricted to a subpopulation of outstation cheques, i.e. cheques between metros or between a metro and state capital and (c) the very low value outstation cheques may be significantly associated to collection time and thus such low value cheques may behave in a way different from normal value cheques. In line with RBI's suggestion to carry out a more detailed study addressing the above issues, as a follow-up, series of surveys were carried out. These surveys have addressed (a) and (c). Regarding (b), the present study can be thought of being restricted to cheque collections involving only metros and state capitals. Such a restriction does not alter the conclusions since of the total cheque data 86% of the cheque values are MICR cheques of which 82% is cleared at the RBI's 16 clearing houses across metros and state capitals (See Appendix C).

Analyzing the effects of low value cheques, it is seen that indeed there is a significant impact due to low value cheques. The following table provides the average collection time and the float days. Here while calculating the floats, for cheques where float could not be calculated (i.e., for 7 metro and 4 state capital cheques), we have taken the float days as zero. For the full data on 144 cheques we refer to Appendix F.

Drawn on Metro	Sample size	Mean Float (days)	Mean Time (days)
Small amt (100-200)	24	3.83	10.21
Large amt (>1000)	71	6.20	16.15
Total data	**95**	**5.60**	**14.65**

Drawn on State Capital	Sample size	Mean Float (days)	Mean Time (days)
Small amt (100-200)	19	7.16	18.58
Large amt (>1000)	30	7.70	23.80
Total data	**49**	**7.49**	**21.78**

Through the above table, the bias due to very low value cheques is apparent. Correcting for this bias would reflect a more dismal picture for collection standards of outstation cheques.

Again, an analysis of the collection time with respect to (i) public sector banks and (ii) foreign and private banks reveals that the public sector banks are relatively inefficient in contrast to foreign and private banks. Based on our sample, the tables below provide the number of banks taking 10 days or less and taking more than 10 days to collect an outstation cheque.

Time (Drawn on Metro)	10 days or less	More than 10 days	Total	Odds
Foreign and Private Banks	27	4	31	6.75
Public Sector Banks	14	50	64	0.28
Total	41	54	95	**Odds ratio** = 24.11

Time (Drawn on State Capital)	10 days or less	More than 10 days	Total	Odds
Foreign and Private Banks	6	11	17	0.55
Public Sector Banks	4	28	32	0.14
Total	10	39	49	**Odds ratio** = 3.82

Odds are simply a ratio of the probability that an event will occur versus the probability that the event will not occur, or *probability / (1-probability)*. Odds ratios, therefore, are simply a ratio of odds; in general they refer to the ratio of the odds of an event occurring in one group (foreign and private banks) versus the other group (public sector banks).

For Metro cheques,
(i) in case of foreign and private banks, for every cheque taking more than 10 days, there are 6.75 cheques taking 10 or fewer days,
(ii) in case of public sector banks, for every cheque taking 10 or fewer days, there are 3.57 cheques taking more than 10 days.
(iii) for a bank taking 10 or fewer days to collect a cheque, the odds for it being a foreign or private bank is 24.11 times that of it being a public sector bank.

For State Capital cheques,
(i) in case of foreign and private banks, for every cheque taking 10 or fewer days, there are 1.83 cheques taking more than 10 days,
(ii) in case of public sector banks, for every cheque taking 10 or fewer days, there are 7 cheques taking more than 10 days.
(iii) for a bank taking 10 or fewer days to collect a cheque, the odds for it being a foreign or private bank is 3.82 times that of it being a public sector bank.

Again, an analysis of average figures for float and collection time reveals that for the public sector banks, (i) the average float is about three times that of the foreign and private banks and (ii) the collection time is about two times that of the foreign and private banks. Table below give the details.

Average Float (days)	Drawn on Metro	Drawn on State Capital
Foreign and Private Banks	2.23	3.65
Public Sector Banks	7.23	9.53

Average Time (days)	Drawn on Metro	Drawn on State Capital
Foreign and Private Banks	8.23	13.00
Public Sector Banks	17.77	26.44

Finally, using number of branches as a correlated variable to the number of outstation cheques received for collections, as seen in the table below, in order that our sample is more representative we should have deposited relatively more cheques in the public sector banks. Since private and foreign banks have less float and collection time, the actual enrichment figures is expected to be more than what presented here.

Branch-Sample representation	Branches	%	Sample Cheques	%
Foreign and Private Banks	8252	13.50	48	33.33
Public Sector Banks	52880	86.50	96	66.67
Total	61132	100	144	100

Source: RBI (http://www.rbi.org.in/scripts/PublicationsView.aspx?id=10991)

In order to arrive at more accurate (with a reduced width of the confidence interval) and more irrefutable conclusions (with a 95% level of confidence) we surely need to work with a larger sample of cheques across India. A sampling strategy that could be used for the purpose is suggested in our report. Estimation of float in case of local cheques would be relatively simple as such information could be collected in a more systematic manner. In fact during our study we have indeed observed that majority of the banks *do not* enjoy float (as per our definition of float) in case of local cheques. However, very few banks, those are yet to completely remove this lacuna, contribute towards an overall 0.15 days of average local float on the total volume of local cheques. This value of 0.15 is a rough estimate and needs further refinement based on more data.

In order to understand the cheques being cleared between metros, we make an in-depth study of the cheques cleared between New Delhi, Mumbai and Kolkata. From our existing sample, we observe that there are 82 cheques in this category. The complete data for the 82 cheques is provided in Appendix H. Before summarizing the results based on this data, we introduce the concept of speed clearing.

Speed clearing is defined as clearing an outstation cheque in the same city where it is presented, by processing the cheque under local clearing. For example, in speed clearing, when a New Delhi cheque (which is not an "at par cheque") is presented in Mumbai, it would be processed as if it is an "at par cheque" by presenting it under local clearing in Mumbai. Speed clearing is a solution to reduce time for clearing outstation cheques and has been advocated by RBI since mid 2008.

With respect to bank type, the following table summarizes the scenario for float, collection time, proportion of cheques cleared with 7 days and within 10 days. This is based on the 82 cheques cleared between New Delhi, Mumbai and Kolkata (see Appendix H).

Bank Type	Float (days)	Time (days)	Proportion cleared within 7 days	Proportion cleared within 10 days	Sample Cheques	%
Foreign and Private Banks	2.33	8.48	8/27 = 0.30	23/27 = 0.85	27	32.93
Public Sector Banks	7.53	17.98	9/55 = 0.16	13/55 = 0.24	55	67.07
All	5.82	14.85	17/82 = 0.21	36/82 = 0.44	82	100

The results in the table clearly indicate that more than 60% of the cheques cleared between the metros take more than 10 days. Also, less than 20% of the cheques cleared between the metros take 7 or less days.

Though speed clearing is a feasible solution without any additional resources (except a change in mindset of the banks), unfortunately, changing such a mindset may have some sort of tradeoff in terms of revenue loss. Based on the 2009 sample study, only 3 out of the 38 outstation cheques got processed under speed clearing. This is so inspite of there being 29 (out of 38) cheques that were cleared between metros. Note that when cheques are processed under speed clearing, the banks are not imposing a collection charge since they simply follow the local clearing process. This appears to be a possible deterrent for revenue earnings of the banks. Under core banking scenario, technologically there is no difference between speed

clearing and clearing a local cheque. In fact speed clearing is a more meaningful solution than to print "at par cheques" applicable between specific cities. RBI may like to make it mandatory for all cheques cleared between high cheque activity cities involving the four metros, Ahmedabad, Bangalore and Hyderabad to go under speed clearing. Subsequently, other cities can be brought under mandatory speed clearing.

Currently in Mumbai, every day about 7 lakh local cheques are cleared, 2500 cheques are cleared under speed clearing and 10,000 intercity cheques are processed under national clearing. As a crude estimate, this indicates that out of 33 cheques, 12 were processed under intercity clearing and the remaining 20 cheques were cleared locally at the outstation location. Thus, if RBI has worked out ON based on only intercity cheques, a modified estimate which is 30/12 times the RBI estimate would be more precise.

Contrary to IBA's belief, we feel that there has been no indication, even by the recent measures taken, to look at collection service as a commercial service. This could be substantiated by RBI's benchmarking of the collection charges for outstation cheques and the NCDRC's benchmarking of standards for collection time.

The experience of banks (in centers where clearing houses exist) that customers rarely approached for immediate credit is more due to lack of awareness of the front-end bank staff and of the bank customers rather than anything else.

With sufficient clearing facility available at metros and state capitals, the delays in the process between metros and between metros and state capitals needs to be relooked into. Just providing compensation for delays would not increase the efficiency in the system.

We acknowledge that the banks never target floats while handling collection business. Nevertheless, such float occurs due to systemic inefficiency leading to enrichment of the banks at the cost of cheque users.

It is only through reliable and sufficient information one can arrive at statistics that could be used as inputs in putting forth measures for improving cheque clearance system in India.

In our study, we have segregated the bulk of cheques into three - (a) Local cheques going under high value clearing (attributing to about 1.4% of all cheques); (b) Local cheques not going under high value clearing (attributing to about 92% to 96% of all cheques); (c) Outstation Cheques (attributing to about 2% to 7% of all cheques). In our workout, we have associated zero float to Local cheques under high value clearing (this puts aside 41% of total value of cheques as having no float). The presence of float is thus associated with the remaining 59% of the total value of cheques. Assuming that we have drawn a random sample from among all outstation cheques, we can statistically establish the average float for all outstation cheques. For local cheques, we have based our float as per the prevailing system in place in the banks. Most of the banks *do not* enjoy float for local cheques. However, few banks have (or had) such a system in place (for non high-value local cheques), which intentionally or unintentionally attributes to one (or two days during weekends) day's float. This fact was used while working out the float enrichment for non high-value local cheques as a whole.

7. Concluding Remarks

It has been more than three years since the article "On Benchmarking Cheque Collections in India" [6] appeared as a Technical Report of the Indian Statistical Institute. The Report deliberated on the scenario post deregulation of cheque collection standards in India and furthermore cheque collection policies framed by different banks were compared. The motivation for this follow-up study is attributed to subsequent developments that have taken place after the release of the Report [6].

In order to understand the ground realities of cheque collection process, an empirical study was carried out. Based on a small sample study (n=133), an estimate for the mean float days for outstation cheques μ is found to be 6.76 days. A 95% confidence interval for the true population mean of float days works out as (5.63, 7.89). In other words, the true population mean of float days is captured by the interval (5.63, 7.89), and we are correct, with probability 0.95, in making such a statement. Furthermore, the sample data suggests that we are correct, with probability 0.95, in rejecting the statement that the average population float days is at most 5.80 as against it being greater than 5.80 days. This evidence itself is compelling in support of our contention on the actual average float days in the population of outstation cheques.

The sample data (n=144) also leads to 17.08 days as a point estimate of the population mean for collection time of outstation cheques. Furthermore, a 95% confidence interval is given by (15.13, 19.03). A test for the null hypothesis that the population mean $\mu = 15.43$, against the alternative hypothesis $\mu > 15.43$ is rejected at 5% level of significance. Thus, with a margin of possible error of only 5%, we can say that the true mean collection time for outstation cheques is greater than 15.43 days rather than it being at most 15.43 days.

It is also concluded (based on n=144) that on an average, only in 35.4% of the cases an outstation cheque would be cleared within 10 days. To be more precise, the true proportion of cheques cleared within 10 days could be anywhere between 27.6% and 43.8%. Moreover, in case one would like to give banks a benefit of doubt then too we can say that only in at most 42.5% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

As one would observe, our estimates provide a very broad interval within which the true value lie. This is because our sample size is relatively small. A larger sample would only help in reducing the width of the confidence interval. Regarding our sample being a representative sample, it is worth mentioning that there exists a selection bias in our sample since it covers only cheques cleared between metros or between a metro and state capitals. Thus, our estimates based on such a sample are expected to be underestimates. We keep this fact in mind but have not used it in any way in arriving at our estimates.

Even though RBI may not have carried out a detailed study on these aspects, our random sample indicates, with sufficient confidence, that RBI's rough figures (on float days and collection time of outstation cheques) are underestimates of the true picture.

Based on conservative estimates, taking value of outstation cheques as 4% of the total value of cheques and interest rate for enrichment computation as 7% p.a., the average amount of banks' enrichment due to float per annum (based on data for the period 2005-09) is Rs. 834 crore. Instead of 7%, if one takes the interest rate as 4% p.a., then this figure works out to Rs.

476 crore. However, with repo rate as high as 9% p.a. and bank rate 6% p.a., it may be more appropriate to consider interest rate for enrichment computation as 7%. To provide more appealing facts, a 95% confidence interval for the true enrichment amount has been obtained and is (727, 940). In other words, taking value of outstation cheques as 4% and interest rate for enrichment computation as 7% p.a., the amount of banks' enrichment due to float is between Rs. 727 crore and Rs. 940 crore, and our being correct in making such a statement has probability 0.95.

Though there may be cheque clearing float, the above observations do not necessarily suggest that float funds are designed for monetary incentive. Though eventually, the banks' gain could be translated in monetary terms, such clearing float may actually be due to inefficiencies in banks, inefficiencies in the Indian postal/mail services and tolerance for delays from customers. Based on the above it is felt that, in the interest of India's cheque payment systems, the estimation of float (and the sample data collection as suggested) could be incorporated as part of a regular supervision checklist.

An analysis of average figures for float and collection time reveals that for the public sector banks, (i) the average float is about three times that of the foreign and private banks and (ii) the collection time is about two times that of the foreign and private banks. Table below give the details.

Average Float (days)	Metro	State Capital
Foreign and Private Banks	2.23	3.65
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Though speed clearing is a feasible solution without any additional resources (except a change in mindset of the banks), unfortunately, changing such a mindset may have some sort of tradeoff in terms of revenue loss. Based on the 2009 sample study, only 3 out of the 38 outstation cheques got processed under speed clearing. This is so inspite of there being 29 (out of 38) cheques that were cleared between metros. Note that when cheques are processed

under speed clearing, the banks are not imposing a collection charge since they simply follow the local clearing process. This appears to be a possible deterrent for revenue earnings of the banks. Under core banking scenario, technologically there is no difference between speed clearing and clearing a local cheque. In fact speed clearing is a more meaningful solution than to print "at par cheques" applicable between specific cities. RBI may like to make it mandatory for all cheques cleared between high cheque activity cities involving the four metros, Ahmedabad, Bangalore and Hyderabad to go under speed clearing. Subsequently, other cities can be brought under mandatory speed clearing.

The concept of immediate credit of up to a certain amount of the cheque (for next day withdrawal) is a Federal Reserve regulation in USA. However, in India somehow, in spite of RBI regulations, this concept has more or less remained only on paper for the past 30 years. It is felt that there is a need to look on a regular basis the all India percentage of satisfactorily operated accounts and the percentage of cheques of less than or equal to Rs. 15,000 that were afforded immediate credit. This would reflect facts leading to clearer perspectives.

Finally, coming to the world scenarios on cheque collections, Office of Fair Trading, UK, noted that cheque usage may be falling and the rate of decline is accelerating as faster and more efficient methods of payments gain popularity. The rate of decline may further accelerate in coming years as newer electronic payments are introduced. Notwithstanding this declining usage, there has been some pressure for changes to the timetable for clearing cheques, a timetable which may have remained unaltered for many years. This is because cheques still play an important role for certain groups of users, such as small and medium sized enterprises, and for certain types of payment.

The world scenarios, as also elaborated in Report [6], are more in for proper regulations on benchmarking standards in case of cheque collections. Cheque Clearing for the 21st century (Check 21) of USA is at par with India's cheque truncation project. Though Check 21 is operational in USA, which was passed into a law way back in October 2003, it did not prompt them to withdraw the benchmark regulations on time frame and interest payments on cheques in the country. Incidentally, subsequent to our Report, in November 2006, the Office of Fair Trading, UK, came out with key proposals on benchmarking cheque collections. These reforms have taken effect in UK from November 2007 and will improve all users' experience of the cheque clearing system, particularly vulnerable consumers, basic bank account holders and small businesses. This fact along with the long-standing standards in USA adds to our contention on need for benchmarking cheque collection standards in India. Thus, we can say that, contrary to RBI's deregulation reasoning, in most countries, rather than banks, it is the regulatory framework which develops the policy relating to collection of cheques. Incidentally the NCDRC and subsequently the RBI, finding it prudent to set appropriate standards, has recently benchmarked the time frame for cheque collections.

The present paper is based on a few practical data that we have come across. It might be worthwhile to take-up a more comprehensive study- but that would require an active involvement of the Reserve Bank of India and other institutions concerned.

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Appendix A

<u>Cheque clearing process</u>

The cheque clearing process involves (see reference [1])

- Acceptance of the cheque for collection.
- Presentment of the cheque to the clearing house by the presenting bank.
- Processing of the cheque/settlement information at the clearing house.
- Collection of the cheque by the paying bank from the clearing house and processing the same for payment.
- Inter-bank settlement of the presented instruments.
- Presenting bank crediting the Payee's account and paying bank debiting the drawer's account.
- Return of cheques, (if any), if the same can not be paid.
- Final release of funds by the presenting/collecting bank on expiry of return schedule (if no returns are made).

Thus a cheque would have to physically travel in two steps. One, from the collecting bank to the clearing house and two, from the clearing house to the paying bank for its presentment to the drawee bank. The information as to whether the cheque has been passed for payment or not would then have to travel back to the clearing house in form of return cheques and from the clearing house to the presenting bank by way of a negative list of returns. It is only after the expiry of return schedule that the beneficiary (payee) can utilise the funds.

Processing of local cheques at clearing houses usually start at late evening preceded by the return processing. The processing and netting of accounts at the clearing houses is completed before morning and cheques sent to the paying bank early morning. Then by evening, the return cheques come back to the clearing house. However, during the intermediate period, these funds are enjoyed by the presenting bank for maintaining its reserves.

In some large cities, there is a system called high-value clearing that facilitates completion of cheque clearing cycle on the same day and the customer depositing the cheque is permitted to utilize the proceeds next morning. This clearing is currently held at 27 major cities in the country. However, the facility of this high-value clearing is usually available at the branches in the main business area; say Fort and Nariman Point area in Mumbai and Connaught Place in New Delhi.

In the high-value clearing, the cheque instruments (each having amounts of Rs. one lakh or more) are presented at the clearing houses by noon. The clearing is completed shortly there after and cheques sent to the paying bank. By early afternoon the same day, the return clearing is done and the clear funds are available with the presenting bank in the late afternoon itself. Customer's account is required to get credited and value dated on the same day on which the high-value cheque is presented. These funds are however not guaranteed to be released, for possible withdrawal, in the depositor's account the same evening.

The cheques presented through clearing houses are received back through return clearing when the drawee bank does not clear the cheque. Only, on receipt of a negative return clearing, the payee is entitled to draw the amount of the cheque from account held at the

collecting bank. A delay of even one day in crediting the payee's account by the amount of the cheque after its presentation/settlement in the clearing house contributes to float.

Before concluding on the cheque clearing process, we provide a very simple illustration for local clearing of cheques. Consider only two banks A and B participating in a clearing house. Let A receive a total of 10 cheques of B, and B receive a total of 15 cheques of A at their respective bank branches in Delhi on Monday morning. Let, the total value of the 10 cheques be Rs. 350 and those of the 15 cheques be Rs. 900. Also, suppose each of the banks A and B has a closing balance of Rs. 1500 in their current account with RBI at the close of Monday. So, on Tuesday morning (after clearing process of all the above mentioned 25 cheques at NCC on Monday night) A is debited with net amount of Rs. 550 (leading to a balance of 1500-900+350 = Rs. 950) and B is credited with net amount of Rs. 550 (leading to a balance of 1500-350+900 = Rs. 2050).

Now, on Tuesday, bank A debits Rs. 900 while bank B debits Rs. 350 from their respective customer accounts. However, bank A may provide actual credit of Rs. 350 and bank B may provide actual credit of Rs. 900 to their respective customer accounts only on Wednesday morning.

In consequence, we see that banks A and B together uses 350+900 = Rs. 1250 of customer funds for one day. In case this money is used up by the recipient customers, the banks would need the additional Rs. 1250 for one day to maintain status quo. In other words we may say that banks A and B have indeed taken a loan of 350+900 = Rs. 1250 to balance their current accounts. The banks use the cheque fund (kept on hold) for balancing their reserve. Such reserves also contribute to the CRR balances of the banks.

Appendix B

Sampling Strategy (Steps 1-4)

STEP 1: The data available, with RBI in an electronic form, is the amount wise cheque data. Thus, one can easily get the frequency distribution and the corresponding histogram (year 2007-08) of the cheque amounts for the 14606 lakh cheques out of which, data on 2376 lakh cheques are from Non-MICR centers (see Appendix C). There are three categories of cheques, i.e., those pertaining to high-value clearing, local and inter-city clearing. Therefore, this frequency distribution could be easily obtained for cheques under high-value clearing and under non high-value clearing separately. Again, under non high-value clearing, the frequency distribution for local cheques and inter-city cheque cleared between RBI centers can be separately obtained. Finally, across banks the distribution of total number and total value of cheques deposited is obtained for each category of cheques. As would be seen later, these would turn out to be very important summary statistics in our computation of EF. It may be added here that a frequency distribution of the cheque deposit amounts with-in each bank for various categories of cheque instruments may be obtained. As a caution we would like to mention here that when bank X brings in a cheque to a clearing house, the cheque information captured associates bank X as the collecting bank which need not necessarily be the payee's bank (it could be payee bank's correspondent bank). However, for our purpose we use the clearing house cheque data on collecting bank as the bank where the cheque was deposited by a customer.

STEP 2: Once we have (from Step 1) the bank wise distribution of total number and total value of outward cheques for non high-value category of cheques, we would take the top few banks in our sample study which contributes to 80% of the total number and total value of such non high-value cheques. Most likely this would lead to considering only around 30 scheduled commercial banks (from among the 284 scheduled banks, which includes the RRBs) for our entire sample study. Thus, for the non high-value category of cheques, we define weight for a bank Z as the ratio of the total cheque value of bank Z to total cheque value of all the banks in the sample study. This weight would be required later in Exercise A of Step 3 to obtain a weighted mean. Note that throughout the paper high-value cheque means a cheque under high-value clearing.

STEP 3: Steps 1 and 2 do not involve any sample study since the data is already available in the form of electronic database with RBI. Now, coming to the small sample observational study, there are two components. The first one relates to (A) the estimation of actual outstation cheque value as percentage of total cheque value and the second relates to (B) the estimation of the float days for (a) local cheques and (b) outstation cheques. So, how do we go about getting a good estimate on these for the year 2007-08? Again, the data is already available and one has to just retrieve them for the period 2007-08. A stratified sampling strategy is suggested with banks as strata.

Exercise A- Estimation for percentage outstation cheques:
For each sample bank, one needs to draw a random sample of five big bank branches and then pick data on the total number and total value of outstation cheques and total number and total value of non high-value local cheques deposited in each of the branches. As a consequence, for each bank (based on the combined data from the five branches), we get the total number and the total value of non high-value cheques. The exercise could be done for each bank at their respective service branch (a single location which receives all cheques

from branches in the city where a cheque was deposited) rather than sampling five bank branches for each bank. Next, based on such a sample data, for each bank obtain the (1) number of outstation cheques as a percentage of total number of non high-value cheques and (2) value of outstation cheques as a percentage of total value of non high-value cheques. Then taking a weighted mean (with weights as obtained in Step 2) of the percentage values, we would get a more representative estimate of the true percentage of outstation cheques deposited and also the true outstation cheque value as percentage to the total non high-value cheque data. Furthermore, this would finally lead to an estimate (since we know the percentage of total value cleared under high-value clearing) of outstation cheque value as percentage of total cheque value which we call the percentage value of outstation cheques (OV). This exercise would also lead to an estimate of the outstation population ratio (PR) of percentage of total value to percentage of total number.

STEP 4: *Exercise B*
(a)- Estimation for local cheque float:
The sample data relates to sampling five bank branches for each bank and then picking at random 3 local cheques deposited. Look for credit date (if same as value date else consider value date as credit date) of the cheque. Also, through cheque number and clearing house data, locate paying bank branch and obtain debit date in the debit account. The difference in the credit and debit dates would contribute to our estimate for the float days in the local cheques for each bank. For each bank obtain the average local float days. Then associating each bank's percentage total value of non high-value local cheques (obtained in Step 1) as weights to the respective average local float days, we get the overall average local float days. The float, based on our sample banks, would provide an estimate of the local float. We call this the local cheque float (LF).

(b)- Estimation for outstation cheque float:
For outstation cheques, one needs to sample five bank branches of each bank and pick randomly (from the books which records daily details of outstation cheques) 5 outstation cheques deposited during 2007-08 in each of the branches. For such cheques, obtain the credit date and the corresponding debit date for the respective payee's and drawee's accounts. Here the drawee's account would be an outstation account. For each bank obtain the average outstation float days. Then associating each bank's percentage total value of outstation cheques as weights to the respective average outstation float days, we get the overall average outstation float days. (Here, each bank's total value of outstation cheques can be estimated from data in Step 1 and Exercise A.) The float, based on our sample banks, would provide an estimate of the outstation float. We call this the outstation cheque float (OF).

Cheque clearing data, provided in Appendix C, suggests that one should initiate the survey, involving Steps 3-4, only at Mumbai and Delhi since both these centers together account for the major volume of cheque transactions. However, it may be desirable (subject to resource availability) to carry out the exercise at a few other centers too.

Appendix C

Cheque Clearing Data 2007-08 (P)

MICR Centers	Value (Rs. crore)	% of Total MICR Value	Number (lakh)	% of Total MICR Number
Ahmedabad	506759	4.40	647	5.29
Bangalore	632328	5.48	735	6.01
Bhopal	62652	0.54	77	0.63
Bhubaneshwar	80994	0.70	60	0.49
Chandigarh	161219	1.40	141	1.15
Chennai	778854	6.76	854	6.98
Guwahati	55169	0.48	60	0.49
Hyderabad	452499	3.92	455	3.72
Jaipur	162022	1.41	219	1.79
Kanpur	69885	0.61	100	0.82
Kolkata	778304	6.75	731	5.98
Mumbai	3685407	31.97	2652	21.68
Nagpur	106352	0.92	151	1.23
New Delhi	1800976	15.62	1776	14.52
Patna	61007	0.53	63	0.52
Thiruvananthapuram	57323	0.50	56	0.46
Non RBI	2076942	18.02	3454	28.24
Total MICR Data	11528690	100	12230	100
Total RBI MICR	9451748	81.98	8776	71.76
Non MICR Data	1867376	13.94*	2376	16.27*
Total cheque Data	13396066	100*	14606	100*

% is with respect to total cheque data.
Source: RBI Bulletin; September 2008

Appendix D

Estimation of float and collection time

Table 1: Cheque data on sample cheques (2006)

	Cheques from United Bank of India, Ranchi (routing number 834027003; SB A/C # 138606)							
Deposited at NEW DELHI	**SB A/C #**	**Cheque #**	**Deposit Date**	**Amount**	**Debit Date**	**Credit Date**	**Float**	**Net Time**
1 HDFC Bank	0921000028341	266457	22.7	101	29.7	5.8	7D	14D, 12WD
2 Bank of India	45255	266458	21.7	102	27.7	2.8	6D	12D, 10WD
3 Syndicate Bank	90622010031300	266459	21.7	103	1.8	8.8	7D	18D, 15WD
4 SBI	0110211965411	266460	21.7	104	2.8	28.7	?	7D, 6WD
5 Canara Bank	021705	013721	21.7	105	3.8	14.8	11D	24D, 20WD
6 ICICI Bank	022501001904	013722	21.7	106	26.7	1.8	6D	11D, 9WD
7 ABN Amro	841474	013723	21.7	107	25.7	3.8	9D	13D, 11WD
8 HSBC	094022878006	013724	26.7	108	7.8	10.8	3D	15D, 13WD
9 Axis Bank	049010100006114	013725	22.7	109	3.8	4.8	1D	13D, 11WD
10 Indian Bank	405039278	013726	21.7	110	21.8	2.9	12D	43D, 37WD
	Cheques from Allahabad Bank, Kolkata (routing number 700010022; SB A/C # 0210631547)							
Deposited at NEW DELHI	**SB A/C #**	**Cheque #**	**Deposit Date**	**Amount**	**Debit Date**	**Credit Date**	**Float**	**Net Time**
11 HDFC Bank	0921000028341	060129	22.7	109	27.7	2.8	6D	11D, 9WD
12 Bank of India	45255	060128	24.7	108	29.7	3.8	5D	10D, 9WD
13 Syndicate Bank	90622010031300	060126	24.7	106	2.8	8.8	6D	15D, 13WD
14 SBI	0110211965411	060127	24.7	107	4.8	28.7	?	4D, 4WD
15 Canara Bank	021705	418060	24.7	100	29.7	4.8	6D	11D, 10WD
16 ICICI Bank	022501001904	060121	24.7	101	29.7	1.8	3D	8D, 7WD
17 ABN Amro	841474	060122	25.7	102	29.7	29.7	0D	4D, 4WD
18 HSBC	094022878006	060123	26.7	103	2.8	4.8	2D	9D, 8WD
19 Axis Bank	049010100006114	060124	22.7	104	2.8	4.8	2D	13D, 11WD
20 United Bank of India	4341	060125	22.7	105	31.7	8.8	8D	17D, 14WD
	Cheques from ICICI Bank, Hyderabad (routing number 500229002; SB A/C # 000801007041)							
Deposited at NEW DELHI	**SB A/C #**	**Cheque #**	**Deposit Date**	**Amount**	**Debit Date**	**Credit Date**	**Float**	**Net Time**
21 Indian Bank	405039278	131802	7.9	100	14.9	23.9	9D	16D, 14WD
22 United Bank of India	4341	131803	16.9	101	25.9	5.10	10D	19D, 16WD
	Cheques from Indian Bank, New Delhi (routing number 110019018; SB A/C # 405039278)							
Deposited at HYDERABAD	**SB A/C #**	**Cheque #**	**Deposit Date**	**Amount**	**Debit Date**	**Credit Date**	**Float**	**Net Time**
23 Andhra Bank	0222ABJ97	769848	6.11	1055	15.11	18.11	3D	12D, 11WD

Note: D-Days, WD-Working days, Amount is in Rupees
'?' means that the float could not be calculated

Table 2: Cheque data on sample cheques (2007)

	Deposited at NEW DELHI	SB A/C #	Cheque #	Deposit Date	Amount	Debit Date	Credit Date	Float	Net Time
	Cheques from United Bank of India, Ranchi (routing number 834027003; SB A/C # 138606)								
1	HDFC Bank	0031000182717	053041	11.4	153	17.4	24.4	7D	13D, 11WD
2	Syndicate Bank	90622010031300	053045	28.3	157	17.4	19.4	2D	22D, 19WD
3	SBI	10617339121	053046	21.4	125	30.4	21.4	?	0D, 0WD
4	HSBC	094022878006	053044	21.4	154	1.5	7.5	6D	16D, 13WD
5	Axis Bank	430010100000550	777359	12.3	151	5.4	3.4	?	22D, 19WD
6	Indian Bank	405039278	053042	7.4	156	18.4	18.5	30D	41D, 35WD
7	United Bank of India	61247	777360	12.3	152	5.4	15.4	10D	34D, 29WD
	Cheques from Allahabad Bank, Kolkata (routing number 700010022; SB A/C # 0210631547)								
8	HDFC Bank	0031000182717	391089	11.4	156	16.4	20.4	4D	9D, 8WD
9	Bank of India	45255	391088	11.4	155	17.4	11.4	?	0D, 0WD
10	SBI	10617339121	391090	21.4	157	3.5	21.4	?	0D, 0WD
11	Canara Bank	021705	391087	11.4	154	17.4	24.4	7D	13D, 11WD
12	ICICI Bank	022501001904	391085	11.4	152	17.4	18.4	1D	7D, 6WD
13	Indian Bank	405036142	319084	7.4	151	24.4	5.5	11D	28D, 24WD
14	Bank of Baroda	3339	391086	17.4	153	24.4	30.4	6D	13D, 11WD
	Cheques from Central Bank of India, Mumbai (routing number 400016073; SB A/C # 10017154554424)								
15	Bank of India	45255	605937	4.4	145	13.4	4.4	?	0D, 0WD
16	Syndicate Bank	90622010031300	605927	23.3	147	4.4	3.4	?	11D, 9WD
17	SBI	10617339121	605938	7.4	144	27.4	11.4	?	4D, 3WD
18	Canara Bank	021705	605940	20.3	141	28.3	7.4	10D	18D, 16WD
19	ICICI Bank	022501001904	605934	7.4	142	12.4	16.4	4D	9D, 7WD
20	United Bank of India	61247	605932	7.4	146	17.4	24.4	7D	17D, 14WD
21	Bank of Baroda	3339	605930	7.4	143	17.4	21.4	4D	14D, 12WD

Note: D-Days, WD-Working days, Amount is in Rupees
'?' means that the float could not be calculated

Table 3: Cheque data on sample cheques (2008)

	Deposited at	Location	SB A/C #	Cheque #	Deposit Date	Amount	Debit Date	Credit Date	Float	Net Time
	Cheque from Central Bank of India, Rajkot (routing number 360016009; SB A/C # 1409)									
1	Axis Bank	Mumbai	049010100006114	86920	18.3	1025	24.3	27.3	3D	9D, 8WD
	Cheques from Oriental Bank of Commerce, Rajkot (routing number 360022002; SB A/C # 4566)									
2	ICICI Bank	Mumbai	028101512947	841802	2.2	1011	9.2	12.2	3D	10D, 8WD
3	HDFC Bank	Mumbai	0921000028341	841803	19.3	1012	28.3	29.3	1D	10D, 9WD
4	HSBC	Mumbai	094022878006	841804	15.3	1013	24.3	28.3	4D	13D, 11WD
5	SBI	Mumbai	30340252436	841805	25.3	1014	3.4	21.4	18D	27D, 23WD
6	Syndicate Bank	New Delhi	90622010031300	841806	31.3	1015	10.4	10.4	0D	10D, 9WD
	Cheques from ICICI Bank, Rajkot (routing number 360229003; SB A/C # 624801041392)									
7	Canara Bank	Mumbai	2724101093062	480558	1.2	1017	9.2	14.2	5D	13D, 11WD
8	Central Bank	Mumbai	3013515595	480559	1.2	1018	12.2	26.2	14D	25D, 21WD
9	United Bank of India	New Delhi	61247	480560	31.3	1019	23.4	30.4	7D	30D, 26WD
10	Indian Bank	New Delhi	405039278	480561	28.3	1020	16.4	22.4	6D	25D, 21WD
	Cheques from Allahabad Bank, Kolkata (routing number 700010022; SB A/C # 2618)									
11	HSBC	Mumbai	094022878006	550688	15.3	1021	20.3	25.3	5D	10D, 8WD
12	Canara Bank	Mumbai	2724101093062	550687	17.3	1020	26.3	26.3	0D	9D, 8WD
13	Axis Bank	Mumbai	049010100006114	550690	18.3	1023	24.3	25.3	1D	7D, 6WD
14	Central Bank	Mumbai	3013515595	550689	18.3	1022	28.3	29.4	32D	42D, 36WD
15	ICICI Bank	Mumbai	028101512947	550698	25.3	1024	2.4	3.4	1D	9D, 8WD
16	HDFC Bank	Mumbai	0921000028341	550699	19.3	1025	28.3	29.3	1D	10D, 9WD
17	SBI	Mumbai	30340252436	550693	25.3	1026	8.4	23.4	15D	29D, 25WD
18	Indian Bank	New Delhi	405039278	550694	28.3	1027	17.4	23.4	6D	26D, 21WD
19	Syndicate Bank	New Delhi	90622010031300	550695	31.3	1028	9.4	10.4	1D	10D, 9WD
20	Canara Bank	New Delhi	21705	550696	31.3	1029	10.4	21.4	11D	21D, 18WD
21	United Bank of India	New Delhi	61247	550697	31.3	1030	18.4	24.4	6D	24D, 21WD
	Cheques from Indian Bank, New Delhi (routing number 110019018; SB A/C # 405039278)									
22	HSBC	Mumbai	094022878006	769859	15.3	1001	20.3	25.3	5D	10D, 8WD
23	Canara Bank	Mumbai	2724101093062	769860	17.3	1002	23.4	23.4	0D	37D, 32WD
24	Central Bank	Mumbai	3013515595	394556	18.3	1003	28.3	29.4	32D	42D, 36WD
25	ICICI Bank	Mumbai	028101512947	394557	25.3	1004	31.3	3.4	3D	9D, 8WD
26	HDFC Bank	Mumbai	0921000028341	394558	19.3	1005	28.3	31.3	3D	12D, 10WD
27	Axis Bank	Mumbai	049010100006114	394559	25.3	1006	2.4	4.4	2D	10D, 9WD
28	SBI	Mumbai	30340252436	394560	25.3	1007	3.4	15.4	11D	21D,18WD
	Cheque from Canara Bank, New Delhi (routing number 110015025; SB A/C # 21705)									
29	SBI	Mumbai	30340252436	500599	11.7	2985	21.7	30.7	9D	19D, 16WD
	Cheque from Syndicate Bank, New Delhi (routing number 110025077; SB A/C # 81175)									
30	Canara Bank	Mumbai	2724101093062	547198	11.7	1249	24.7	24.7	0D	13D, 11WD
	Cheque from Canara Bank, Mumbai (routing number 400015129; SB A/C # 2724101093062)									
31	SBI	New Delhi	0110211965411	931872	29.8	23500	5.9	10.9	5D	12D, 10WD

Note: D-Days, WD-Working days, Amount is in Rupees
'?' means that the float could not be calculated

Table 3: Cheque data on sample cheques (2008)-- Continued

	Deposited at	Location	SB A/C #	Cheque #	Deposit Date	Amount	Debit Date	Credit Date	Float	Net Time
	Cheques from SBI, New Delhi (routing number 110002102; SB A/C # 0110211965411)									
32	Canara Bank	Hyderabad	624101030228	494002	5.4	1051	16.4	23.4	7D	18D, 15WD
33	Corporation Bank	Hyderabad	01/015063	494003	5.4	1052	12.4	15.4	3D	10D, 9WD
	Cheques from Canara Bank, Hyderabad (routing number 500015018; SB A/C # 0624101030228)									
34	United Bank of India	New Delhi	61247	859281	23.4	1071	7.5	13.5	6D	20D, 17WD
35	Indian Bank	New Delhi	405039278	859282	25.4	1072	20.6	24.6	4D	60D, 59WD
36	Central Bank	Mumbai	3013515595	859283	16.4	1073	26.4	5.5	9D	19D, 16WD
37	SBI	Mumbai	30366335700	859284	15.5	1074	18.6	27.6	9D	43D, 37WD
38	HDFC Bank	Mumbai	0921000028341	859285	2.6	1075	5.6	6.6	1D	4D, 4WD
39	Axis Bank	Mumbai	049010100006114	859286	3.5	1076	9.5	12.5	3D	9D, 7WD
40	SBI	Mumbai	30340252436	859287	3.5	7001	3.6	11.6	8D	39D, 33WD
	Cheques from United Bank of India, Ranchi (routing number 834027003; SB A/C # 0062010138606)									
41	HSBC	Mumbai	094022878006	053050	25.3	1031	2.4	7.4	5D	13D, 11WD
42	HDFC Bank	Mumbai	0921000028341	053051	25.3	1032	19.4	21.4	2D	27D, 23WD
43	Axis Bank	Mumbai	049010100006114	053052	25.3	1033	2.4	3.4	1D	9D, 8WD
44	SBI	Mumbai	30340252436	053053	25.3	1034	5.5	30.5	25D	66D, 57WD
45	Canara Bank	Mumbai	2724101093062	053054	25.3	1035	7.4	19.4	12D	25D, 22WD
46	Central Bank	Mumbai	3013515595	053055	26.3	1036	16.4	29.4	13D	34D, 29WD
47	Indian Bank	New Delhi	405039278	053056	28.3	1037	19.4	19.5	30D	52D, 44WD
48	SBI	New Delhi	0110211965411	053057	31.3	1038	16.4	4.4	?	4D, 4WD
49	Syndicate Bank	New Delhi	90622010031300	053058	31.3	1039	15.4	16.4	1D	16D, 14WD
50	Canara Bank	Mumbai	2724101093062	053059	19.4	1040	28.4	6.5	8D	17D, 14WD
51	United Bank of India	New Delhi	61247	053060	31.3	1041	22.4	30.4	8D	30D, 26WD
	Cheques from Central Bank of India, Mumbai (routing number 400016093; SB A/C # 3013515595)									
52	Allahabad Bank	Kolkata	2618	640242	10.3	11300	15.3	22.3	7D	12D, 11WD
53	United Bank of India	Ranchi	0062010138606	640243	19.3	11400	2.4	15.4	13D	27D, 23WD
54	Indian Bank	New Delhi	405039278	640249	28.3	1061	16.4	23.4	7D	26D, 22WD
55	Canara Bank	New Delhi	21705	640250	31.3	1062	10.4	21.4	11D	21D, 18WD
56	Bank of Baroda	New Delhi	09630100000387	640251	29.3	1063	10.4	21.4	11D	23D, 19WD
57	ICICI Bank	New Delhi	22501001904	640252	31.3	1064	4.4	7.4	3D	7D, 6WD
58	SBI	New Delhi	0110211965411	640253	31.3	1065	11.4	4.4	?	4D, 4WD
59	Syndicate Bank	New Delhi	90622010031300	640254	31.3	1066	5.4	7.4	2D	7D, 6WD
60	United Bank of India	New Delhi	61247	640255	31.3	1067	19.4	24.4	5D	24D, 21WD
61	Canara Bank	Hyderabad	624101030228	640256	5.4	11200	16.4	23.4	7D	18D, 15WD
62	Corporation Bank	Hyderabad	01/015063	640257	5.4	1068	12.4	16.4	4D	11D, 9WD

Note: D-Days, WD-Working days, Amount is in Rupees
'?' means that the float could not be calculated

Table 4: Cheque data on sample cheques (2009)

	Bank where deposited	Place of deposit	Bank where drawn	Place where drawn	Cheque Number	Deposit Date	Amount (Rs.)	Debit Date	Credit Date	Float (days)	Net Time (days)
1	Axis Bank	Kolkata	Indian Bank	New Delhi	540949	16.3	1004	23.3	24.3	1	8
2	Axis Bank	Kolkata	Central Bank	Mumbai	672445	16.3	1005	20.3	23.3	3	7
3	Axis Bank	Kolkata	United Bank of India	New Delhi	604423	25.3	1006	31.3	2.4	2	8
4	Axis Bank	Kolkata	United Bank of India	Mumbai	096463	25.3	1007	31.3	2.4	2	8
5	Central Bank	Kolkata	United Bank of India	New Delhi	604421	16.3	1008	31.3	28.4	28	43
6	Central Bank	Kolkata	Canara Bank	Mumbai	973535	16.3	1009	2.4	20.4	18	35
7	UCO Bank	Kolkata	Axis Bank	New Delhi	087746	25.3	1012	4.4	21.4	17	27
8	UCO Bank	Kolkata	SBI	Mumbai	745622	25.3	1013	4.4	13.4	9	19
9	Bank of Baroda	Kolkata	Canara Bank	Mumbai	973537	25.3	1014	8.4	11.4	3	17
10	Bank of India	Kolkata	United Bank of India	New Delhi	604422	30.3	1015	15.4	17.4	2	18
11	Bank of Baroda	Kolkata	Canara Bank	Mumbai	973536	16.3	1016	24.3	26.3	2	10
12	Bank of India	Kolkata	Axis Bank	New Delhi	087747	30.3	1350	15.4	17.4	2	18
13	Canara Bank	Mumbai	Central Bank	Kolkata	114752	18.4	1001	29.4	7.5	8	19
14	Axis Bank*	Mumbai	Bank of India	Kolkata	091019	27.7	1004	29.7	29.7	0	2
15	HSBC	Mumbai	Central Bank	Kolkata	114754	4.6	1005	10.6	12.6	2	8
16	Axis Bank	Mumbai	UCO Bank	Kolkata	600065	4.6	1006	9.6	11.6	2	7
17	SBI	Mumbai	UCO Bank	Kolkata	600064	4.6	1007	24.6	9.7	15	35
18	Canara Bank	Mumbai	Bank of India	Kolkata	091020	28.7	1008	10.8	20.8	10	23
19	Central Bank*	Mumbai	Bank of India	Kolkata	091021	31.7	1009	3.8	1.8	0	1
20	Indian Bank	New Delhi	SBI	Santiniketan	163261	21.4	1010	5.5	20.5	15	29
21	Central Bank	Mumbai	SBI	Santiniketan	163262	3.6	1011	19.6	29.6	10	26
22	United Bank of India*	Mumbai	Bank of India	Kolkata	091022	31.7	1012	1.8	1.8	0	1
23	United Bank of India	Mumbai	Central Bank	Kolkata	114755	31.7	1013	14.8	1.9	18	32
24	SBI	Mumbai	Central Bank	Kolkata	114756	30.7	1014	14.8	26.8	12	27
25	HDFC Bank	Mumbai	UCO Bank	Kolkata	600067	31.7	1015	4.8	5.8	1	5
26	Canara Bank	Mumbai	UCO Bank	Kolkata	600069	30.7	1016	10.8	20.8	10	21
27	HDFC Bank	Bhopal	United Bank of India	Mumbai	96466	11.4	1023	16.4	17.4	1	6
28	United Bank of India	Bhopal	Canara Bank	Mumbai	973542	11.4	1025	25.4	28.4	3	17
29	HDFC Bank	Bhopal	Canara Bank	Mumbai	973543	11.4	1026	16.4	17.4	1	6
30	United Bank of India	Bhopal	Indian Bank	New Delhi	540951	11.4	1028	23.4	29.4	6	18
31	HDFC Bank	Bhopal	Indian Bank	New Delhi	540952	11.4	1029	16.4	18.4	2	7
32	Central Bank	Mumbai	United Bank of India	New Delhi	604426	3.6	1032	9.6	15.6	6	12
33	United Bank of India	Bhopal	Central Bank	Mumbai	672448	11.4	1038	25.4	28.4	3	17
34	HDFC Bank	Bhopal	SBI	New Delhi	494010	11.4	1040	16.4	18.4	2	7
35	Indian Bank	New Delhi	Canara Bank	Mumbai	973548	21.4	1071	2.5	5.5	3	14
36	United Bank of India	New Delhi	Canara Bank	Mumbai	973540	22.4	1080	2.5	12.5	10	20
37	Axis Bank	New Delhi	Canara Bank	Mumbai	973539	22.4	30000	2.5	5.5	2	13
38	Axis Bank	Mumbai	United Bank of India	New Delhi	583049	12.3	50000	19.3	21.3	2	9

'' means that these cheques got cleared under speed clearing*

Table 4: Cheque data on sample cheques (2009)-- Continued

	Bank where deposited	Place of deposit	Bank where drawn	Place where drawn	Cheque Number	Deposit Date	Amount (Rs.)	Debit Date	Credit Date	Float (days)	Net Time (days)
39	Canara Bank	Mumbai	J & K Bank	Sopore, Kashmir	15403322	18.4	1021	4.5	12.5	8	24
40	United Bank of India	New Delhi	J & K Bank	Sopore, Kashmir	15403323	22.4	1022	4.5	26.5	22	34
41	United Bank of India	Mumbai	J & K Bank	Sopore, Kashmir	15403324	24.4	1023	4.5	15.5	11	21
42	HSBC	Mumbai	J & K Bank	Sopore, Kashmir	15403326	4.6	1025	8.7	21.7	13	47
43	United Bank of India	Mumbai	Canara Bank	Sopore, Kashmir	90115	24.4	1026	5.5	9.6	35	46
44	HDFC Bank	Mumbai	Canara Bank	Sopore, Kashmir	90116	4.6	1027	22.6	24.6	2	20
45	Axis Bank	Mumbai	Canara Bank	Sopore, Kashmir	90117	4.6	1028	15.6	1.7	16	27
46	SBI	Mumbai	Canara Bank	Sopore, Kashmir	90118	4.6	1029	23.6	24.8	62	81
47	United Bank of India	Mumbai	Canara Bank	Sopore, Kashmir	90119	22.6	775	8.7	16.10	100	116

Estimation of float (outstation cheques)

Case $n = 21$:

Let us define the random variable X = number of float days. Our empirical experiment has led us to a random sample of size $n = 21$ on the variable X.

With sample values $x_1=7$, $x_2=6$, $x_3=7$, $x_4=11$, $x_5=6$, $x_6=9$, $x_7=3$, $x_8=1$, $x_9=12$, $x_{10}=6$, $x_{11}=5$, $x_{12}=6$, $x_{13}=6$, $x_{14}=3$, $x_{15}=0$, $x_{16}=2$, $x_{17}=2$, $x_{18}=8$, $x_{19}=9$, $x_{20}=10$, $x_{21}=3$, the sample mean $\bar{x} = 5.81$ and sample standard deviation $s = 3.33$. Thus, a good estimate for μ is 5.81 days. Note that we are presently taking the simple mean rather than the weighted mean. In case we take the weighted mean, the variance estimate of the weighted mean would change resulting in slight modification in the expression for the confidence interval. We now find a 95% confidence interval for μ. Since $n = 21$, we have n-1 = 20 degrees of freedom for t, and $t_{0.025,20} = 2.086$. The resulting confidence interval is $4.30 \leq \mu \leq 7.32$. In other words, the true population mean of float days is captured by the interval (4.30, 7.32), and we are correct, with probability 0.95, in making such a statement.

The above confidence interval gives both a lower confidence bound and an upper confidence bound for μ. Thus it provides a two-sided confidence interval. Similarly, since $t_{0.05,20} = 1.725$ a 95% upper-confidence bound for μ is 7.06 and a 95% lower-confidence bound for μ is 4.56.

From above it would thus follow that a hypothesis test for the null hypothesis $\mu = 4.55$ against an alternative hypothesis $\mu > 4.55$ would be rejected at 5% level of significance. In other words, we can say that the sample data suggests that we would be correct in rejecting the statement that the average population float days is at most 4.55 as against it being greater than 4.55 days, and the probability of our being correct is 0.95.

Case $n = 35$:

The available observations on number of float days X ($n = 35$) are
7, 6, 7, 11, 6, 9, 3, 1, 12, 6, 5, 6, 6, 3, 0, 2, 2, 8, 9, 10, 3, 7, 2, 6, 30, 10, 4, 7, 1, 11, 6, 10, 4, 7, 4.

This provides us the sample mean $\bar{x}$ = 6.60 and sample standard deviation s = 5.14. Thus, a good estimate for μ is 6.60 days. A 95% confidence interval for μ based on n = 35 (using $t_{0.025,34}$ = 2.032) is thus $4.83 \leq \mu \leq 8.37$. In other words, the true population mean of float days is captured by the interval (4.83, 8.37), and we are correct, with probability 0.95, in making such a statement. Similarly, since $t_{0.05,34}$ = 1.691 a 95% upper-confidence bound for μ is 8.07 and a 95% lower-confidence bound for μ is 5.13. From above it would thus follow that a hypothesis test for the null hypothesis μ = 5.12 against an alternative hypothesis $\mu >$ 5.12 would be rejected at 5% level of significance. In other words, we can say that the sample data suggests that we would be correct in rejecting the statement that the average population float days is at most 5.12 as against it being greater than 5.12 days, and the probability of our being correct is 0.95.

Case n = 95:
The available observations on number of float days X (n = 95) are
7, 6, 7, 11, 6, 9, 3, 1, 12, 6, 5, 6, 6, 3, 0, 2, 2, 8, 9, 10, 3, 7, 2, 6, 30, 10, 4, 7, 1, 11, 6, 10, 4, 7, 4, 3, 3, 1, 4, 18, 0, 5, 14, 7, 6, 5, 0, 1, 32, 1, 1, 15, 6, 1, 11, 6, 5, 0, 32, 3, 3, 2, 11, 9, 0, 5, 7, 3, 6, 4, 9, 9, 1, 3, 8, 5, 2, 1, 25, 12, 13, 30, 1, 8, 8, 7, 13, 7, 11, 11, 3, 2, 5, 7, 4.

This provides us the sample mean $\bar{x}$ = 7.01 and sample standard deviation s = 6.64. Thus, a good estimate for μ is 7.01 days. A 95% confidence interval for μ based on n = 95 (using $t_{0.025,94}$ = 1.986) is thus $5.66 \leq \mu \leq 8.36$. In other words, the true population mean of float days is captured by the interval (5.66, 8.36), and we are correct, with probability 0.95, in making such a statement. Similarly, since $t_{0.05,94}$ = 1.661 a 95% upper-confidence bound for μ is 8.14 and a 95% lower-confidence bound for μ is 5.88. From above it would thus follow that a hypothesis test for the null hypothesis μ = 5.87 against an alternative hypothesis $\mu >$ 5.87 would be rejected at 5% level of significance. In other words, we can say that the sample data suggests that we would be correct in rejecting the statement that the average population float days is at most 5.87 as against it being greater than 5.87 days, and the probability of our being correct is 0.95.

Case n = 133:
The available observations on number of float days X (n = 133) are
7, 6, 7, 11, 6, 9, 3, 1, 12, 6, 5, 6, 6, 3, 0, 2, 2, 8, 9, 10, 3, 7, 2, 6, 30, 10, 4, 7, 1, 11, 6, 10, 4, 7, 4, 3, 3, 1, 4, 18, 0, 5, 14, 7, 6, 5, 0, 1, 32, 1, 1, 15, 6, 1, 11, 6, 5, 0, 32, 3, 3, 2, 11, 9, 0, 5, 7, 3, 6, 4, 9, 9, 1, 3, 8, 5, 2, 1, 25, 12, 13, 30, 1, 8, 8, 7, 13, 7, 11, 11, 3, 2, 5, 7, 4, 1, 3, 2, 2, 28, 18, 17, 9, 3, 2, 2, 2, 8, 0, 2, 2, 15, 10, 0, 15, 10, 0, 18, 12, 1, 10, 1, 3, 1, 6, 2, 6, 3, 2, 3, 10, 2, 2.

This provides us the sample mean $\bar{x}$ = 6.76 and sample standard deviation s = 6.61. Thus, a good estimate for μ is 6.76 days. A 95% confidence interval for μ based on n = 133 (using $t_{0.025,132}$ = 1.978) is thus $5.63 \leq \mu \leq 7.89$. In other words, the true population mean of float days is captured by the interval (5.63, 7.89), and we are correct, with probability 0.95, in making such a statement. Similarly, since $t_{0.05,132}$ = 1.656 a 95% upper-confidence bound for μ is 7.71 and a 95% lower-confidence bound for μ is 5.81. From above it would thus follow that a hypothesis test for the null hypothesis μ = 5.80 against an alternative hypothesis $\mu >$

5.80 would be rejected at 5% level of significance. In other words, we can say that the sample data suggests that we would be correct in rejecting the statement that the average population float days is at most 5.80 as against it being greater than 5.80 days, and the probability of our being correct is 0.95. These evidences itself are compelling in support of our contention on the actual average float days in the outstation cheque population.

Summary Table (float days)	n = 21	n = 35	n = 95	n = 133
Sample mean	5.81	6.60	7.01	6.76
95% Confidence interval of mean	(4.30, 7.32)	(4.83, 8.37)	(5.66, 8.36)	(5.63, 7.89)
95% lower-confidence bound for μ	4.56	5.13	5.88	5.81

Estimation of collection time (outstation cheques)

Case $n = 23$:
We define the variable Y = number of days between cheque deposit and cheque credit dates. Working on lines exactly similar to variable X, the population mean of Y is estimated based on the sample observations $y_1=14$, $y_2=12$, $y_3=18$, $y_4=7$, $y_5=24$, $y_6=11$, $y_7=13$, $y_8=15$, $y_9=13$, $y_{10}=43$, $y_{11}=11$, $y_{12}=10$, $y_{13}=15$, $y_{14}=4$, $y_{15}=11$, $y_{16}=8$, $y_{17}=4$, $y_{18}=9$, $y_{19}=13$, $y_{20}=17$, $y_{21}=16$, $y_{22}=19$, $y_{23}=12$. (Here, for the two cheques deposited at SBI, we have taken the values as 7 and 4 days but it is evident from the debit dates on the drawee bank branch that the actual collection time is at least 12 and 11 days respectively.) The sample mean and sample standard deviation are $\bar{y} = 13.87$ and $s = 7.86$, respectively. Thus, one can take 13.87 days as a point estimate of the population mean of Y. Furthermore, a 95% confidence interval is given by (10.47, 17.27). Finally, based on our sample data, a test for the null hypothesis that the population mean $\mu = 11.05$, against the alternative hypothesis $\mu > 11.05$ is rejected at 5% level of significance. Thus, with a margin of possible error of only 5%, we can say that the true mean collection time for outstation cheques is greater than 11.05 days rather than it being at most 11.05 days.

Case $n = 44$:
The observations on the number of days between cheque deposit and cheque credit dates Y ($n = 44$) are
14, 12, 18, 7, 24, 11, 13, 15, 13, 43, 11, 10, 15, 4, 11, 8, 4, 9, 13, 17, 16, 19, 12, 13, 22, 0, 16, 22, 41, 34, 9, 0, 0, 13, 7, 28, 13, 0, 11, 4, 18, 9, 17, 14.
(Here, for the nine cheques deposited, we have taken the values as 7, 4, 0, 22, 0, 0, 0, 11 and 4 days but it is evident from the debit dates on the drawee bank branch that the actual collection time is at least 12, 11, 9, 24, 6, 12, 9, 12 and 20 days respectively.)

The population mean of Y is estimated based on the 44 sample observations. The sample mean and sample standard deviation are $\bar{y} = 13.86$ and $s = 9.45$, respectively. Thus, one can take 13.86 days as a point estimate of the population mean of Y. Furthermore, a 95% confidence interval is given by (10.99, 16.74). Finally, based on our sample data, a test for the null hypothesis that the population mean $\mu = 11.46$, against the alternative hypothesis $\mu > 11.46$ is rejected at 5% level of significance. Thus, with a margin of possible error of only 5%, we can say that the true mean collection time for outstation cheques is greater than 11.46 days rather than it being at most 11.46 days.

Case *n* = 106:
The observations on the number of days between cheque deposit and cheque credit dates Y
(*n* = 106) are
14, 12, 18, 7, 24, 11, 13, 15, 13, 43, 11, 10, 15, 4, 11, 8, 4, 9, 13, 17, 16, 19, 12, 13, 22, 0, 16,
22, 41, 34, 9, 0, 0, 13, 7, 28, 13, 0, 11, 4, 18, 9, 17, 14, 9, 10, 10, 13, 27, 10, 13, 25, 30, 25,
10, 9, 7, 42, 9, 10, 29, 26, 10, 21, 24, 10, 37, 42, 9, 12, 10, 21, 19, 13, 12, 18, 10, 20, 60, 19,
43, 4, 9, 39, 13, 27, 9, 66, 25, 34, 52, 4, 16, 17, 30, 12, 27, 26, 21, 23, 7, 4, 7, 24, 18, 11.
(Here, for the eleven cheques deposited, we have taken the values as 7, 4, 0, 22, 0, 0, 0, 11, 4,
4 and 4 days but it is evident from the debit dates on the drawee bank branch that the actual
collection time is at least 12, 11, 9, 24, 6, 12, 9, 12, 20, 16 and 11 days respectively.)

The population mean of Y is estimated based on the 106 sample observations. The sample
mean and sample standard deviation are $\bar{y}$ = 17.54 and s = 12.33, respectively. Thus, one
can take 17.54 days as a point estimate of the population mean of Y. Furthermore, a 95%
confidence interval is given by (15.16, 19.91). Finally, based on our sample data, a test for
the null hypothesis that the population mean μ = 15.54, against the alternative hypothesis $\mu >$
15.54 is rejected at 5% level of significance. Thus, with a margin of possible error of only
5%, we can say that the true mean collection time for outstation cheques is greater than 15.54
days rather than it being at most 15.54 days.

Case *n* = 144:
The observations on the number of days between cheque deposit and cheque credit dates Y
(*n* = 144) are
14, 12, 18, 7, 24, 11, 13, 15, 13, 43, 11, 10, 15, 4, 11, 8, 4, 9, 13, 17, 16, 19, 12, 13, 22, 0, 16,
22, 41, 34, 9, 0, 0, 13, 7, 28, 13, 0, 11, 4, 18, 9, 17, 14, 9, 10, 10, 13, 27, 10, 13, 25, 30, 25,
10, 9, 7, 42, 9, 10, 29, 26, 10, 21, 24, 10, 37, 42, 9, 12, 10, 21, 19, 13, 12, 18, 10, 20, 60, 19,
43, 4, 9, 39, 13, 27, 9, 66, 25, 34, 52, 4, 16, 17, 30, 12, 27, 26, 21, 23, 7, 4, 7, 24, 18, 11, 8, 7,
8, 8, 43, 35, 27, 19, 17, 18, 10, 18, 19, 2, 8, 7, 35, 23, 1, 29, 26, 1, 32, 27, 5, 21, 6, 17, 6, 18,
7, 12, 17, 7, 14, 20, 13, 9.
(Here, for the eleven cheques deposited, we have taken the values as 7, 4, 0, 22, 0, 0, 0, 11, 4,
4, 4 and 1 days but it is evident from the debit dates on the drawee bank branch that the
actual collection time is at least 12, 11, 9, 24, 6, 12, 9, 12, 20, 16, 11 and 3 days
respectively.)

The population mean of Y is estimated based on the 144 sample observations. The sample
mean and sample standard deviation are $\bar{y}$ = 17.08 and s = 11.84, respectively. Thus, one
can take 17.08 days as a point estimate of the population mean of Y. Furthermore, a 95%
confidence interval is given by (15.13, 19.03). Finally, based on our sample data, a test for
the null hypothesis that the population mean μ = 15.43, against the alternative hypothesis $\mu >$
15.43 is rejected at 5% level of significance. Thus, with a margin of possible error of only
5%, we can say that the true mean collection time for outstation cheques is greater than 15.43
days rather than it being at most 15.43 days.

Summary Table (collection time)	n = 23	n = 44	n = 106	n = 144
Sample mean	13.87	13.86	17.54	17.08
95% Confidence interval of mean	(10.47, 17.27)	(10.99, 16.74)	(15.16, 19.91)	(15.13, 19.03)
95% lower-confidence bound for μ	11.06	11.47	15.55	15.44

Estimation of proportion of outstation cheques in the population that takes at most 10 days to clear

Case *n* = 23:
Let π be the proportion of outstation cheques in the population that take at most 10 days to clear. In what follows, we estimate π. Let Z be a variable indicating the number of cheques cleared within 10 days. Then for a given number of cheques *n*, Z follows a binomial distribution with parameters *n* and π. A point estimate of π is $p = z/n$.

From our sample data (Table 1), it follows that $z = 6$, $n = 23$ and $p = 0.261$.

Clopper and Pearson (1934) provide exact small-sample confidence interval for π. For $0 < z < n$ the Clopper and Pearson interval with confidence coefficient at least $1 - \alpha$ is (Π_l, Π_u) where,

$$\Pi_l = \left(1 + \frac{n-z+1}{zF_{2z,2(n-z+1)}(1-\alpha/2)}\right)^{-1}, \quad \Pi_u = \left(1 + \frac{n-z}{(z+1)F_{2(z+1),2(n-z)}(\alpha/2)}\right)^{-1} \quad \text{and} \quad F_{a,b}(c) \text{ denotes}$$

the $1 - c$ quantile from the F distribution with degrees of freedom *a* and *b*. Thus, for our sample data, this confidence interval for π is (0.102, 0.484) with confidence coefficient at least 0.95.

Similarly, 95% limits of the Jeffreys prior interval (see references [16] and [17]) are (0.117, 0.461). Also, a 95% Wilson confidence interval (see references [21]) is (0.125, 0.465). It is known that generally Clopper and Pearson intervals are more conservative than the Jeffreys prior interval or Wilson interval and this is clearly reflected in its bigger length of confidence interval. Thus, to summarize it follows that, on an average, only in 26.1% of the cases an outstation cheque would be cleared within 10 days. To be more precise, the true proportion of cheques cleared within 10 days could be anywhere between 10.2% and 48.4%. Moreover, in case one would like to give banks a benefit of doubt then too we can say (based on one-sided Clopper and Pearson confidence bound) that only in at most 45.1% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

Case *n* = 44:
From our combined sample data, it follows that $z = 14$, $n = 44$ and $p = 0.318$. The Clopper and Pearson confidence interval for π is (0.186, 0.476) with confidence coefficient at least 0.95. Also, 95% limits of the Wilson interval are (0.120, 0.466). Thus, to summarize it follows that, the true proportion of cheques cleared within 10 days could be anywhere between 18.6% and 47.6%. Moreover, in case one would like to give banks a benefit of doubt then too we can say (based on one-sided Clopper and Pearson confidence bound) that only in at most 45.2% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

Case *n* = 106:
From our combined sample data, it follows that $z = 35$, $n = 106$ and $p = 0.330$. The Clopper and Pearson confidence interval for π is (0.242, 0.428) with confidence coefficient at least 0.95. Also, 95% limits of the Wilson interval are (0.248, 0.424). Thus, to summarize it follows that, the true proportion of cheques cleared within 10 days could be anywhere

between 24.2% and 42.8%. Moreover, in case one would like to give banks a benefit of doubt then too we can say (based on one-sided Clopper and Pearson confidence bound) that only in at most 41.3% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

Case $n = 144$:
From our combined sample data, it follows that $z = 51$, $n = 144$ and $p = 0.354$. The Clopper and Pearson confidence interval for π is (0.276, 0.438) with confidence coefficient at least 0.95. Also, 95% limits of the Wilson interval are (0.281, 0.435). Thus, to summarize it follows that, the true proportion of cheques cleared within 10 days could be anywhere between 27.6% and 43.8%. Moreover, in case one would like to give banks a benefit of doubt then too we can say (based on one-sided Clopper and Pearson confidence bound) that only in at most 42.5% of the cases an outstation cheque would be cleared within 10 days. That we are correct, in making such statements, has a probability of at least 0.95.

Summary Table (estimate of π^{*})	n = 23	n = 44	n = 106	n = 144
Sample proportion	0.261	0.318	0.330	0.354
95% Clopper and Pearson interval	(0.102, 0.484)	(0.186, 0.476)	(0.242, 0.428)	(0.276, 0.438)
95% Wilson interval	(0.125, 0.465)	(0.120, 0.466)	(0.248, 0.424)	(0.281, 0.435)
95% upper-confidence bound	0.451	0.452	0.413	0.425

* π is the proportion of outstation cheques that take at most 10 days to clear

Appendix E

Estimation of banks' EF

Period 2005-06:

Following are the inputs for year 2005-06.

1. Total value of cheques = TV = Rs. 11337062 crore (as per reference [7])

2. Total number of cheques = TN = 12895 lakh (as per reference [7])

3. % value of cheques under high-value clearing = HV = 43.89 (as per reference [7] and [9])

4. % number of outstation cheques = ON = 0.5 (as per RBI's rough estimate; however we additionally consider other, more plausible, values of 1 and 2)

5. Population ratio of % value of outstation to % number of outstation = PR = OV/ON = 4 (using RBI's rough estimates of OV= 2 and ON=0.5)

6. % value of local cheque float = LF = 0.25 (as a crude conservative estimate based on available facts, a small sample study and on interaction with bank branches)

7. % value of outstation cheque float = OF = 5.81 (as a crude conservative estimate based on a small empirical experiment (n=21))

The above parameters would lead one to arrive at the enrichment of banks due to float. From the parameters ON and PR, as mentioned in (4) and (5) above, it follows that one can arrive at the % value of outstation cheques = OV = ON × PR (= 2, considering RBI's rough estimates).

RBI has not indicated any figures for LF, OF and IN and so we have taken figures based on a small empirical study and the interactions we had with bank branches and RBI. With respect to LF, we have also noted a few paragraphs in [2], as a means to add to the conclusions drawn from interactions with bank branches and RBI. We quote two paragraphs from [2] for lucidity.

"Some of the officers of different Banks, who are present in the Court submits that with regard to the local clearance of cheque, as soon as the cheque is presented/deposited for clearance with the Bank, credit is given but the funds are not allowed to be withdrawn till the amount is received by the Bank and, therefore, there is no loss of interest to the customer. Prima facie, it is apparent that this policy followed by some Banks is required to be uniformly adopted by rest of the Banks."
…

"For the local cheques, it has been pointed out that most of the Banks who have filed affidavits and have stated that credit and debit of the cheques is being given or would be given on the same day."

Furthermore, for local cheques, consequent to the initial analysis, some more sample studies were carried out for those banks where we did observe some kind of float. Informal feedback from such banks having local float was received (one foreign bank even gave a formal reply to this effect). It was then felt that there is indeed a systemic float for such banks with respect to local cheques and the average local float days was at least $(1\times5+2\times1)/6 = 1.17$ days. Our conservative estimate of LF = 0.25 is based on these observations. Furthermore, in arriving at this figure we have used (1) Tables 1.19 and 3.3 of the Basic Statistical Returns of Scheduled Commercial Banks in India (see reference [11]) and (2) data provided in RBI's publication "A Profile of Banks 2006-07" (see reference [12]). We restrict to the number of accounts and amount outstanding in current and savings deposits for each bank group (other than Regional Rural Banks) for the year 2005-06. We used this to identify for each bank group their percentage contribution of total number of accounts and total amount. The same is done with respect to the number of offices for each group. These percentage values are expected to have a positive correlation with the percentage values of the total cheque values deposited in the bank groups. In the absence of data related to Step 2, we have used the percentage of total number of accounts/offices or total amount outstanding for each bank group to represent the percentage values of the cheque values deposited in the bank groups. This gives us a very clear picture on what LF is expected to be like.

However, in general, the data under points 4-7 above does not have the full-fledged data backing to arrive at more authentic figures. However, in absence of the full-fledged data backing the estimates given are based on the data that is there at our disposal. In doing so we have taken due precaution to curtail the probability of overestimating the figures. However, in order to give flexibility in our estimates we now present various scenarios.

From above we thus arrive at EF as a function of the four parameters LF, OF, OV and IN. In short (using 2005-06 data, TV=11337062 and HV = 43.89) the EF in Rs. crore is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000}.$$

Note that OV = ON × PR. Now, with LF = 0.25, OF = 5.81 and PR = 4, we have the values of EF, presented in table below, for different combination of values for ON and IN. We denote such EF by $EF_{(ON,IN)}$.

Further, in order to provide more appealing facts, we give 95% confidence interval for the true EF. Denoting true EF by EF_0, let, $EF_0 = a\,\mu + b$, where $a = TV\times IN\times OV/3650000$, $b = TV\times IN\times(100-HV-OV)\times LF/3650000$ and μ is the population mean of the number of float days for outstations cheques. Thus, using the 95% confidence interval (4.30, 7.32) for μ, a 95% confidence interval for EF_0 is $(4.30a + b, 7.32a + b)$. We provide the 95% confidence interval for EF_0 for various combination values of ON and IN (with TV=11337062, HV = 43.89, LF = 0.25, OF = 5.81, PR = 4, OV = ON × PR).

2005-06

LF=0.25		Point estimate	95% confidence limits	
ON	IN	$EF_{(ON,IN)}$ (Rs. crore)	for EF_0 (Rs. crore)	
0.5	4	312	275	350
0.5	7	547	481	612
0.5	9	703	619	787
1	4	451	376	526
1	7	789	657	920
1	9	1014	845	1183
2	4	727	577	877
2	7	1272	1009	1535
2	9	1636	1298	1973

Period 2005-07:

Next, on lines similar to above, we now base our analysis for the period 2005-07. We have the following inputs for year 2005-06 and year 2006-07. A subscript of '1' refers to year 2005-06 whereas subscript '2' refers to year 2006-07.

TV_1 = Rs. 11329134 crore, TV_2 = Rs. 12056100 crore   (as per reference [22])

TN_1 = 12868 lakh, TN_2 = 13706 lakh (as per reference [22])

HV_1 = 43.97, HV_2 = 41.75 (as per references [22] and [23])

ON = 0.5 (as per RBI's rough estimate; however we additionally consider other, more plausible, values of 1 and 2)

PR = 4 (as earlier)

LF = 0.225 (considering LF_1=0.25 as earlier; and LF_2=0.20 assuming some improvements)

OF = 6.60 (as a crude conservative estimate based on a small empirical experiment (n=35))

From above we thus arrive at EF as a function of the four parameters LF, OF, OV and IN. In short (using 2005-07 data) the annual EF in Rs. crore during the two year period 2005-07 is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000},$$

with TV = $(TV_1 + TV_2)/2$ = 11692617 and HV= $(TV_1\ HV_1 + TV_2\ HV_2)/(TV_1 + TV_2)$ = 42.83.

Now, with LF = 0.225, OF = 6.60 and PR = 4, we have the values for average annual EF, presented in table below, based on the two years 2005-07 (taking different combination of values for ON and IN).

Further, we give 95% confidence interval for EF_0, the true average annual EF for the period 2005-07. Using the 95% confidence interval (4.83, 8.37) for the population float days μ, a 95% confidence interval for EF_0 is $(4.83a + b, 8.37a + b)$ with $a = TV \times IN \times OV/3650000$ and $b = TV \times IN \times (100-HV-OV) \times LF/3650000$. We provide the 95% confidence interval for EF_0 for various combination values of ON and IN (with TV = 11692617, HV = 42.83, LF = 0.225, OF = 6.60, PR = 4, OV = ON $\times$ PR).

2005-07

LF=0.225		Point estimate	95% confidence limits	
ON	IN	$EF_{(ON,IN)}$ (Rs. crore)	for EF_0 (Rs. crore)	
0.5	4	328	283	374
0.5	7	574	495	654
0.5	9	738	636	841
1	4	492	401	582
1	7	860	702	1019
1	9	1106	902	1310
2	4	818	637	1000
2	7	1432	1115	1750
2	9	1841	1433	2249

Period 2005-08:

Here we base our analysis for the period 2005-08. We have the following inputs for year 2005-06, year 2006-07 and year 2007-08. Subscript '3' would refer to year 2007-08.

TV_1 = Rs. 11329134 crore, TV_2 = Rs. 12042426 crore, TV_3 = Rs. 13396066 crore   (as per reference [26])

TN_1 = 12868 lakh, TN_2 = 13673 lakh, TN_3 = 14606 lakh (as per reference [26])

HV_1 = 43.97, HV_2 = 41.80, HV_3 = 41.06 (as per references [26] and [27])

ON = 0.5 (as per RBI's rough estimate; however we additionally consider other, more plausible, values of 1 and 2)

PR = 4 (as earlier)

LF = 0.20 (considering LF_1=0.25 and LF_2=0.20 as earlier; and LF_3=0.15 assuming further improvements)

OF = 7.01 (as a conservative estimate based on a small empirical experiment (n=95))

From above we thus arrive at EF as a function of the four parameters LF, OF, OV and IN. In short (using 2005-08 data) the annual EF in Rs. crore during the three year period 2005-08 is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000},$$

with TV = $(TV_1 + TV_2 + TV_3)/3$ = 12255875 and HV= $(TV_1 HV_1 + TV_2 HV_2 + TV_3 HV_3)/(TV_1 + TV_2 + TV_3)$ = 42.20.

Now, with LF = 0.20, OF = 7.01 and PR = 4, we have the values for average annual EF, presented in table below, based on the three years 2005-08 (taking different combination of values for ON and IN).

Further, we give 95% confidence interval for EF_0, the true average annual EF for the period 2005-08. Using the 95% confidence interval (5.66, 8.36) for the population float days μ, a 95% confidence interval for EF_0 is $(5.66a + b, 8.36a + b)$ with $a = TV \times IN \times OV/3650000$ and $b = TV \times IN \times (100-HV-OV) \times LF/3650000$. We provide the 95% confidence interval for EF_0 for various combination values of ON and IN (with TV= 12255875, HV = 42.20, LF = 0.20, OF = 7.01, PR = 4, OV = ON × PR).

2005-08

LF=0.20		Point estimate	95% confidence limits	
ON	IN	$EF_{(ON,IN)}$ (Rs. crore)	for EF_0 (Rs. crore)	
0.5	4	338	302	374
0.5	7	592	528	655
0.5	9	761	679	843
1	4	521	449	594
1	7	912	785	1039
1	9	1173	1009	1336
2	4	887	742	1032
2	7	1552	1298	1806
2	9	1996	1669	2322

Period 2005-09:

Finally, we base our analysis for the period 2005-09. We have the following inputs for year 2005-06, year 2006-07, year 2007-08 and year 2008-09. Subscript '4' would refer to year 2008-09.

TV_1 = Rs. 11329134 crore, TV_2 = Rs. 12042426 crore, TV_3 = Rs. 13396066 crore, TV_4 = Rs. 12461202 crore (as per reference [29])

TN_1 = 12868 lakh, TN_2 = 13673 lakh, TN_3 = 14606 lakh, TN_4 = 13959 lakh (as per reference [29])

HV_1 = 43.97, HV_2 = 41.80, HV_3 = 41.06, HV_4 = 36.52 (as per references [28] and [29])

ON = 0.5 (as per RBI's rough estimate; however we additionally consider other, more plausible, values of 1 and 2)

PR = 4 (as earlier)

LF = 15 (considering LF_1=0.25, LF_2=0.20 and LF_3=0.15 as earlier; and LF_4=0 assuming further improvements)

OF = 6.76 (as a conservative estimate based on a small empirical experiment (n=133))

From above we thus arrive at EF as a function of the four parameters LF, OF, OV and IN. In short (using 2005-09 data) the annual EF in Rs. crore during the four year period 2005-09 is given by

$$EF = \frac{TV \times IN \times \{OV \times OF + (100 - HV - OV) \times LF\}}{3650000},$$

with TV = $(TV_1 + TV_2 + TV_3 + TV_4)/4$ = 12307207 and HV= $(TV_1\,HV_1 + TV_2\,HV_2 + TV_3\,HV_3 + TV_4\,HV_4)/(TV_1 + TV_2 + TV_3 + TV_4)$ = 40.76.

Now, with LF = 0.15, OF = 6.76 and PR = 4, we have the values for average annual EF, presented in table below, based on the four years 2005-09 (taking different combination of values for ON and IN).

Further, we give 95% confidence interval for EF_0, the true average annual EF for the period 2005-09. Using the 95% confidence interval (5.63, 7.89) for the population float days μ, a 95% confidence interval for EF_0 is $(5.63a + b, 7.89a + b)$ with a = TV×IN×OV/3650000 and b = TV×IN×(100-HV-OV)×LF/3650000. We provide the 95% confidence interval for EF_0 for various combination values of ON and IN (with TV= 12307207, HV = 40.76, LF = 0.15, OF = 6.76, PR = 4, OV = ON × PR).

2005-09

LF=0.15		Point estimate	95% confidence limits	
ON	IN	$EF_{(ON,IN)}$ (Rs. crore)	for EF_0 (Rs. crore)	
0.5	4	298	268	329
0.5	7	522	468	575
0.5	9	671	602	739
1	4	476	415	537
1	7	834	727	940
1	9	1072	935	1209
2	4	833	711	955
2	7	1458	1244	1671
2	9	1874	1600	2149

We would like to add here that in case, for a cheque presented under high-value clearing, the customer's account is not credited the same day on which the cheque is presented but credited the next day, it would add to float. For every 0.01 days of such high-value cheque float, with IN = 9%, the contribution to annual float enrichments would be Rs. 12.75 crore. In our above computation for EF we have taken such contributions as zero.

Before we conclude this Appendix, we present the result for the period 2005-09 where we consider zero local float, i.e., LF=0. This gives the point and interval estimates for the average annual EF, presented in table below, based on the four years 2005-09 (taking different combination of values for ON and IN).

2005-09

LF=0		Point estimate	95% confidence limits	
ON	IN	$EF_{(ON,IN)}$ (Rs. crore)	for EF_0 (Rs. crore)	
0.5	4	182	152	213
0.5	7	319	266	372
0.5	9	410	342	479
1	4	365	304	426
1	7	638	532	745
1	9	821	683	958
2	4	729	607	851
2	7	1276	1063	1490
2	9	1641	1367	1915

Appendix F

Complete Cheque data for 144 cheques

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	M/S	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
ABN Amro	F	New Delhi	Allahabad Bank	Kolkata	M	2006	102	0	4
HSBC	F	New Delhi	Allahabad Bank	Kolkata	M	2006	103	2	9
HSBC	F	Mumbai	Indian Bank	New Delhi	M	2008	1001	5	10
HSBC	F	Mumbai	Allahabad Bank	Kolkata	M	2008	1021	5	10
HSBC	F	Mumbai	Central Bank	Kolkata	M	2009	1005	2	8
ABN Amro	F	New Delhi	United B of India	Ranchi	S	2006	107	9	13
HSBC	F	New Delhi	United B of India	Ranchi	S	2006	108	3	15
HSBC	F	New Delhi	United B of India	Ranchi	S	2007	154	6	16
HSBC	F	Mumbai	Oriental B of Com	Rajkot	S	2008	1013	4	13
HSBC	F	Mumbai	United B of India	Ranchi	S	2008	1031	5	13
Allahabad Bank	N	Kolkata	Central Bank	Mumbai	M	2008	11300	7	12
Bank of Baroda	N	New Delhi	Central Bank	Mumbai	M	2007	143	4	14
Bank of Baroda	N	New Delhi	Allahabad Bank	Kolkata	M	2007	153	6	13
Bank of Baroda	N	New Delhi	Central Bank	Mumbai	M	2008	1063	11	23
Bank of Baroda	N	Kolkata	Canara Bank	Mumbai	M	2009	1014	3	17
Bank of Baroda	N	Kolkata	Canara Bank	Mumbai	M	2009	1016	2	10
Bank of India	N	New Delhi	Allahabad Bank	Kolkata	M	2006	108	5	10
Bank of India	N	New Delhi	Central Bank	Mumbai	M	2007	145	**0**	0
Bank of India	N	New Delhi	Allahabad Bank	Kolkata	M	2007	155	**0**	0
Bank of India	N	Kolkata	United B of India	New Delhi	M	2009	1015	2	18
Bank of India	N	Kolkata	Axis Bank	New Delhi	M	2009	1350	2	18
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2006	100	6	11
Canara Bank	N	New Delhi	Central Bank	Mumbai	M	2007	141	10	18
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2007	154	7	13
Canara Bank	N	Mumbai	Indian Bank	New Delhi	M	2008	1002	0	37
Canara Bank	N	Mumbai	Allahabad Bank	Kolkata	M	2008	1020	0	9
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2008	1029	11	21
Canara Bank	N	New Delhi	Central Bank	Mumbai	M	2008	1062	11	21
Canara Bank	N	Mumbai	Syndicate Bank	New Delhi	M	2008	1249	0	13
Canara Bank	N	Mumbai	Central Bank	Kolkata	M	2009	1001	8	19
Canara Bank	N	Mumbai	Bank of India	Kolkata	M	2009	1008	10	23
Canara Bank	N	Mumbai	UCO Bank	Kolkata	M	2009	1016	10	21
Central Bank	N	Mumbai	Indian Bank	New Delhi	M	2008	1003	32	42
Central Bank	N	Mumbai	Allahabad Bank	Kolkata	M	2008	1022	32	42
Central Bank	N	Kolkata	United B of India	New Delhi	M	2009	1008	28	43
Central Bank	N	Kolkata	Canara Bank	Mumbai	M	2009	1009	18	35
Central Bank	N	Mumbai	Bank of India	Kolkata	M	2009	1009	0	1
Central Bank	N	Mumbai	United B of India	New Delhi	M	2009	1032	6	12
Indian Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2007	151	11	28

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	M/S	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
Indian Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2008	1027	6	26
Indian Bank	N	New Delhi	Central Bank	Mumbai	M	2008	1061	7	26
Indian Bank	N	New Delhi	Canara Bank	Mumbai	M	2009	1071	3	14
SBI	N	Mumbai	UCO Bank	Kolkata	M	2009	1007	15	35
SBI	N	Mumbai	Central Bank	Kolkata	M	2009	1014	12	27
SBI	N	New Delhi	Allahabad Bank	Kolkata	M	2006	107	**0**	4
SBI	N	New Delhi	Central Bank	Mumbai	M	2007	144	**0**	4
SBI	N	New Delhi	Allahabad Bank	Kolkata	M	2007	157	**0**	0
SBI	N	Mumbai	Indian Bank	New Delhi	M	2008	1007	11	21
SBI	N	Mumbai	Allahabad Bank	Kolkata	M	2008	1026	15	29
SBI	N	New Delhi	Central Bank	Mumbai	M	2008	1065	**0**	4
SBI	N	Mumbai	Canara Bank	New Delhi	M	2008	2985	9	19
SBI	N	New Delhi	Canara Bank	Mumbai	M	2008	23500	5	12
Syndicate Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2006	106	6	15
Syndicate Bank	N	New Delhi	Central Bank	Mumbai	M	2007	147	**0**	11
Syndicate Bank	N	New Delhi	Allahabad Bank	Kolkata	M	2008	1028	1	10
Syndicate Bank	N	New Delhi	Central Bank	Mumbai	M	2008	1066	2	7
United B of India	N	Mumbai	Bank of India	Kolkata	M	2009	1012	0	1
United B of India	N	Mumbai	Central Bank	Kolkata	M	2009	1013	18	32
United B of India	N	Bhopal	Canara Bank	Mumbai	M	2009	1025	3	17
United B of India	N	Bhopal	Indian Bank	New Delhi	M	2009	1028	6	18
United B of India	N	Bhopal	Central Bank	Mumbai	M	2009	1038	3	17
United B of India	N	New Delhi	Canara Bank	Mumbai	M	2009	1080	10	20
UCO Bank	N	Kolkata	Axis Bank	New Delhi	M	2009	1012	17	27
UCO Bank	N	Kolkata	SBI	Mumbai	M	2009	1013	9	19
United B of India	N	New Delhi	Allahabad Bank	Kolkata	M	2006	105	8	17
United B of India	N	New Delhi	Central Bank	Mumbai	M	2007	146	7	17
United B of India	N	New Delhi	Allahabad Bank	Kolkata	M	2008	1030	6	24
United B of India	N	New Delhi	Central Bank	Mumbai	M	2008	1067	5	24
Andhra Bank	N	Hyderabad	Indian Bank	New Delhi	M	2006	1055	3	12
Bank of India	N	New Delhi	United B of India	Ranchi	S	2006	102	6	12
Canara Bank	N	New Delhi	United B of India	Ranchi	S	2006	105	11	24
Canara Bank	N	Mumbai	ICICI Bank	Rajkot	S	2008	1017	5	13
Canara Bank	N	Mumbai	United B of India	Ranchi	S	2008	1035	12	25
Canara Bank	N	Mumbai	United B of India	Ranchi	S	2008	1040	8	17
Canara Bank	N	Hyderabad	SBI	New Delhi	M	2008	1051	7	18
Canara Bank	N	Hyderabad	Central Bank	Mumbai	M	2008	11200	7	18
Central Bank	N	Mumbai	ICICI Bank	Rajkot	S	2008	1018	14	25
Central Bank	N	Mumbai	United B of India	Ranchi	S	2008	1036	13	34
Central Bank	N	Mumbai	Canara Bank	Hyderabad	S	2008	1073	9	19
Central Bank	N	Mumbai	SBI	Santiniketan	S	2009	1011	10	26
Corporation Bank	N	Hyderabad	SBI	New Delhi	M	2008	1052	3	10
Corporation Bank	N	Hyderabad	Central Bank	Mumbai	M	2008	1068	4	11
Indian Bank	N	New Delhi	ICICI Bank	Hyderabad	S	2006	100	9	16

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	M/S	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
Indian Bank	N	New Delhi	United B of India	Ranchi	S	2006	110	12	43
Indian Bank	N	New Delhi	United B of India	Ranchi	S	2007	156	30	41
Indian Bank	N	New Delhi	ICICI Bank	Rajkot	S	2008	1020	6	25
Indian Bank	N	New Delhi	United B of India	Ranchi	S	2008	1037	30	52
Indian Bank	N	New Delhi	Canara Bank	Hyderabad	S	2008	1072	4	60
Indian Bank	N	New Delhi	SBI	Santiniketan	S	2009	1010	15	29
SBI	N	New Delhi	United B of India	Ranchi	S	2006	104	**0**	7
SBI	N	New Delhi	United B of India	Ranchi	S	2007	125	**0**	0
SBI	N	Mumbai	Oriental B of Com	Rajkot	S	2008	1014	18	27
SBI	N	Mumbai	United B of India	Ranchi	S	2008	1034	25	66
SBI	N	New Delhi	United B of India	Ranchi	S	2008	1038	**0**	4
SBI	N	Mumbai	Canara Bank	Hyderabad	S	2008	1074	9	43
SBI	N	Mumbai	Canara Bank	Hyderabad	S	2008	7001	8	39
Syndicate Bank	N	New Delhi	United B of India	Ranchi	S	2006	103	7	18
Syndicate Bank	N	New Delhi	United B of India	Ranchi	S	2007	157	2	22
Syndicate Bank	N	New Delhi	Oriental B of Com	Rajkot	S	2008	1015	0	10
Syndicate Bank	N	New Delhi	United B of India	Ranchi	S	2008	1039	1	16
United B of India	N	New Delhi	ICICI Bank	Hyderabad	S	2006	101	10	19
United B of India	N	New Delhi	United B of India	Ranchi	S	2007	152	10	34
United B of India	N	New Delhi	ICICI Bank	Rajkot	S	2008	1019	7	30
United B of India	N	New Delhi	United B of India	Ranchi	S	2008	1041	8	30
United B of India	N	New Delhi	Canara Bank	Hyderabad	S	2008	1071	6	20
United B of India	N	Ranchi	Central Bank	Mumbai	M	2008	11400	13	27
Axis Bank	P	Mumbai	Indian Bank	New Delhi	M	2008	1006	2	10
Axis Bank	P	Mumbai	Allahabad Bank	Kolkata	M	2008	1023	1	7
Axis Bank	P	Kolkata	Indian Bank	New Delhi	M	2009	1004	1	8
Axis Bank	P	Mumbai	Bank of India	Kolkata	M	2009	1004	0	2
Axis Bank	P	Kolkata	Central Bank	Mumbai	M	2009	1005	3	7
Axis Bank	P	Kolkata	United B of India	New Delhi	M	2009	1006	2	8
Axis Bank	P	Mumbai	UCO Bank	Kolkata	M	2009	1006	2	7
Axis Bank	P	Kolkata	United B of India	Mumbai	M	2009	1007	2	8
Axis Bank	P	New Delhi	Canara Bank	Mumbai	M	2009	30000	2	13
Axis Bank	P	Mumbai	United B of India	New Delhi	M	2009	50000	2	9
HDFC Bank	P	Bhopal	Canara Bank	Mumbai	M	2009	1026	1	6
HDFC Bank	P	New Delhi	Allahabad Bank	Kolkata	M	2006	109	6	11
HDFC Bank	P	New Delhi	Allahabad Bank	Kolkata	M	2007	156	4	9
HDFC Bank	P	Mumbai	Indian Bank	New Delhi	M	2008	1005	3	12
HDFC Bank	P	Mumbai	Allahabad Bank	Kolkata	M	2008	1025	1	10
HDFC Bank	P	Mumbai	UCO Bank	Kolkata	M	2009	1015	1	5
HDFC Bank	P	Bhopal	United B of India	Mumbai	M	2009	1023	1	6
HDFC Bank	P	Bhopal	Indian Bank	New Delhi	M	2009	1029	2	7
HDFC Bank	P	Bhopal	SBI	New Delhi	M	2009	1040	2	7
ICICI Bank	P	New Delhi	Allahabad Bank	Kolkata	M	2006	101	3	8
ICICI Bank	P	New Delhi	Central Bank	Mumbai	M	2007	142	4	9

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	M/S	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
ICICI Bank	P	New Delhi	Allahabad Bank	Kolkata	M	2007	152	1	7
ICICI Bank	P	Mumbai	Indian Bank	New Delhi	M	2008	1004	3	9
ICICI Bank	P	Mumbai	Allahabad Bank	Kolkata	M	2008	1024	1	9
ICICI Bank	P	New Delhi	Central Bank	Mumbai	M	2008	1064	3	7
Axis Bank	P	New Delhi	Allahabad Bank	Kolkata	M	2006	104	2	13
Axis Bank	P	Mumbai	Central Bank	Rajkot	S	2008	1025	3	9
Axis Bank	P	Mumbai	United B of India	Ranchi	S	2008	1033	1	9
Axis Bank	P	Mumbai	Canara Bank	Hyderabad	S	2008	1076	3	9
HDFC Bank	P	New Delhi	United B of India	Ranchi	S	2006	101	7	14
HDFC Bank	P	New Delhi	United B of India	Ranchi	S	2007	153	7	13
HDFC Bank	P	Mumbai	Oriental B of Com	Rajkot	S	2008	1012	1	10
HDFC Bank	P	Mumbai	United B of India	Ranchi	S	2008	1032	2	27
HDFC Bank	P	Mumbai	Canara Bank	Hyderabad	S	2008	1075	1	4
ICICI Bank	P	New Delhi	United B of India	Ranchi	S	2006	106	6	11
ICICI Bank	P	Mumbai	Oriental B of Com	Rajkot	S	2008	1011	3	10
Axis Bank	P	New Delhi	United B of India	Ranchi	S	2006	109	1	13
Axis Bank	P	New Delhi	United B of India	Ranchi	S	2007	151	**0**	22

F means foreign banks

N means public sector banks

P means private banks

M means cheques drawn on metro

S means cheques drawn on state capitals

0 under the column Float is the value zero where float could not be calculated

Appendix G

Response to the comments received from RBI

In what follows, we address some specific responses, one at a time.

"The study assumes enrichment of all banks irrespective of whether they needed the float money or not for maintaining their CRR/SLR requirements. The study assumes a clearing value of about Rs. 38,000 crore per day. If the outstation cheques were to be 4% of this value (though RBI data quoted in the Report states that this is 2%) the amount involved is approximately Rs. 1529 crore for the entire banking system. Reckoning the number of clearing banks at 100 (for ease of calculation) the amount of float per bank per day is Rs. 15.29 crore. However, on an average, banks may have been maintaining excess CRR over and above these levels."

RESPONSE: Customers contribute towards the comfort level of excess CRR of the banks. The excess CRR is a safeguard against a default leading to penalty.

Notwithstanding the above, what is mentioned indicate the importance of net non high-value cheque values at the end of each day, which is used towards CRR balances. This fact appear to indicate the use of the hold money by majority of banks to balance their CRR balances, during next day's clearing, without providing access of the same money to their customers.

"Even assuming that the float enjoyed by the banking system is around Rs. 1529 crore per day, given the fact that this float will be distributed across the banks' branch network in the country and further assuming that there are 1000 clearing house locations, the float enjoyed in each location is around Rs. 1.53 crore. Further, assuming that there are at least 20 banks in each clearing centre, the average float for each bank would be about Rs. 7.65 lakh.
The above points suggest that the clearing float may not be on account of a monetary incentive. It may be due to inefficiencies in banks, inefficiencies in the Indian postal/mail services and tolerance for delays from customers – purely from an economic perspective. These aspects may also need to be appropriately factored in the report."

RESPONSE: Agree, but the system (due to such inefficiencies) leads to monetary incentives, although not intentional, at the expense of the depositors.

"In case an outstation cheque of Rs. 100 is to be collected at the earliest, at the minimum the following three cost elements are involved (a) it has to be sent by courier to the other centre, (b) the processing of this cheque takes more time than local cheques involving additional administrative costs, (c) the collection details have to be communicated to the first branch. Each of these three cost elements are factored into the service charges that banks may charge. The survey does not mention the cost aspects for outstation cheques."

RESPONSE: The cost aspect for outstation cheques (charges levied to customers for clearing) is also worth looking into, more so since the quantum of charges passed on to the customers for providing this basic service has already been pondered upon by the RBI constituted working group while formulating a scheme for ensuring reasonableness of bank charges The working group, in their September 2006 Report, had recommended working out

a suitable model for achieving reasonableness in the charges for providing such services vis-à-vis actual cost involved (and I quote "The Working Group discussed the issue and recommends to Reserve Bank that suitable steps be taken to determine and evaluate the costs of the banks for providing the basic services."). Till date no concrete headway is seen in the direction of achieving a suitable model.

*"The language used in some portions of the Report suggests a strong bias against the Reserve Bank. This bias seems to have influenced presentation of some aspect in an inappropriate manner which may not be intentional. For example – though the Report accepts that the volume of high value clearing constitutes about 44% (in terms of value) states in Appendix A where it describes the cheque clearing process that "....However, coverage of this high-value clearing is **very limited**…" (emphasis supplied)."*

RESPONSE: The intention has always been to present thoughts and results in a most unbiased fashion. However, in case there is any bias it should be in favour of RBI since RBI is in favour of the masses who are using cheques as a mode of payment.

The referred sentence of Appendix A has been picked up from FAQ of RBI's official website (please refer to http://www.rbi.org.in/scripts/FAQView.aspx?Id=59). The sentence mentions coverage with respect to vicinity around a clearing house for high-value clearing. It, by no means, has any relation to the 44% (or currently 41%) of the value of cheques under high value clearing. However, it is pertinent to mention here that only about 1.5% of the cheques cleared in India are cleared under high value clearing. For 2007-08, the total value of cheques was Rs. 1,33,96,066 crore, and the average daily cheque transactions was of the order of Rs. 44,654 crore. This carries more significance to non high-value clearings since on an average it constitutes transactions involving a major mass of about 47.96 lakh cheques per day (which is 98.50% of total cheques transacted) attributing on an average Rs. 26,320 crore per day.

"While describing the cheque collection process in the illustration in Appendix A, it is mentioned that the results of the clearing process pertaining to the cheques deposited by customers on Monday are reflected in the banks' accounts with RBI on Tuesday morning. However, it goes on to say that the results of the clearing process pertaining to the cheques deposited by the customers on Tuesday are reflected in the banks' account with RBI on Tuesday night (it perhaps ought to have been Wednesday morning). If this correction is made in the illustration, it might suggest that the banks do not enjoy any effective float and therefore no enrichment"

RESPONSE: What we would see is that on Wednesday morning the current account balance of A is 950-50+1500 = Rs. 2400 and that of B is 2050-1500+50 = Rs. 600. Thus the two banks use Monday's cheque-funds to balance their funds during Tuesday night's clearing.

Appendix H
Complete Cheque data for cheques between New Delhi, Mumbai and Kolkata

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
Allahabad Bank	N	Kolkata	Central Bank	Mumbai	2008	11300	7	12
Bank of Baroda	N	Kolkata	Canara Bank	Mumbai	2009	1014	3	17
Bank of Baroda	N	Kolkata	Canara Bank	Mumbai	2009	1016	2	10
Central Bank	N	Kolkata	Canara Bank	Mumbai	2009	1009	18	35
UCO Bank	N	Kolkata	SBI	Mumbai	2009	1013	9	19
Axis Bank	P	Kolkata	Central Bank	Mumbai	2009	1005	3	7
Axis Bank	P	Kolkata	United B of India	Mumbai	2009	1007	2	8
Bank of India	**N**	**Kolkata**	**United B of India**	**New Delhi**	**2009**	**1015**	**2**	**18**
Bank of India	**N**	**Kolkata**	**Axis Bank**	**New Delhi**	**2009**	**1350**	**2**	**18**
Central Bank	**N**	**Kolkata**	**United B of India**	**New Delhi**	**2009**	**1008**	**28**	**43**
UCO Bank	**N**	**Kolkata**	**Axis Bank**	**New Delhi**	**2009**	**1012**	**17**	**27**
Axis Bank	**P**	**Kolkata**	**Indian Bank**	**New Delhi**	**2009**	**1004**	**1**	**8**
Axis Bank	**P**	**Kolkata**	**United B of India**	**New Delhi**	**2009**	**1006**	**2**	**8**
HSBC	F	Mumbai	Allahabad Bank	Kolkata	2008	1021	5	10
HSBC	F	Mumbai	Central Bank	Kolkata	2009	1005	2	8
Canara Bank	N	Mumbai	Allahabad Bank	Kolkata	2008	1020	0	9
Canara Bank	N	Mumbai	Central Bank	Kolkata	2009	1001	8	19
Canara Bank	N	Mumbai	Bank of India	Kolkata	2009	1008	10	23
Canara Bank	N	Mumbai	UCO Bank	Kolkata	2009	1016	10	21
Central Bank	N	Mumbai	Allahabad Bank	Kolkata	2008	1022	32	42
Central Bank*	N	Mumbai	Bank of India	Kolkata	2009	1009	0	1
SBI	N	Mumbai	UCO Bank	Kolkata	2009	1007	15	35
SBI	N	Mumbai	Central Bank	Kolkata	2009	1014	12	27
SBI	N	Mumbai	Allahabad Bank	Kolkata	2008	1026	15	29
United B of India*	N	Mumbai	Bank of India	Kolkata	2009	1012	0	1
United B of India	N	Mumbai	Central Bank	Kolkata	2009	1013	18	32
Axis Bank	P	Mumbai	Allahabad Bank	Kolkata	2008	1023	1	7
Axis Bank*	P	Mumbai	Bank of India	Kolkata	2009	1004	0	2
Axis Bank	P	Mumbai	UCO Bank	Kolkata	2009	1006	2	7
HDFC Bank	P	Mumbai	Allahabad Bank	Kolkata	2008	1025	1	10
HDFC Bank	P	Mumbai	UCO Bank	Kolkata	2009	1015	1	5
ICICI Bank	P	Mumbai	Allahabad Bank	Kolkata	2008	1024	1	9
HSBC	**F**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1001**	**5**	**10**
Canara Bank	**N**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1002**	**0**	**37**
Canara Bank	**N**	**Mumbai**	**Syndicate Bank**	**New Delhi**	**2008**	**1249**	**0**	**13**
Central Bank	**N**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1003**	**32**	**42**
Central Bank	**N**	**Mumbai**	**United B of India**	**New Delhi**	**2009**	**1032**	**6**	**12**
SBI	**N**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1007**	**11**	**21**
SBI	**N**	**Mumbai**	**Canara Bank**	**New Delhi**	**2008**	**2985**	**9**	**19**
Axis Bank	**P**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1006**	**2**	**10**
HDFC Bank	**P**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1005**	**3**	**12**
ICICI Bank	**P**	**Mumbai**	**Indian Bank**	**New Delhi**	**2008**	**1004**	**3**	**9**

Bank where deposited	Bank Type	Place of deposit	Bank where drawn	Place where drawn	Deposit Year	Amount (Rs.)	Float (days)	Time (days)
Axis Bank	**P**	**Mumbai**	**United B of India**	**New Delhi**	**2009**	**50000**	**2**	9
ABN Amro	F	New Delhi	Allahabad Bank	Kolkata	2006	102	0	4
HSBC	F	New Delhi	Allahabad Bank	Kolkata	2006	103	2	9
Bank of Baroda	N	New Delhi	Allahabad Bank	Kolkata	2007	153	6	13
Bank of India	N	New Delhi	Allahabad Bank	Kolkata	2006	108	5	10
Bank of India	N	New Delhi	Allahabad Bank	Kolkata	2007	155	**0**	0
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	2006	100	6	11
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	2007	154	7	13
Canara Bank	N	New Delhi	Allahabad Bank	Kolkata	2008	1029	11	21
Indian Bank	N	New Delhi	Allahabad Bank	Kolkata	2007	151	11	28
Indian Bank	N	New Delhi	Allahabad Bank	Kolkata	2008	1027	6	26
SBI	N	New Delhi	Allahabad Bank	Kolkata	2006	107	**0**	4
SBI	N	New Delhi	Allahabad Bank	Kolkata	2007	157	**0**	0
Syndicate Bank	N	New Delhi	Allahabad Bank	Kolkata	2006	106	6	15
Syndicate Bank	N	New Delhi	Allahabad Bank	Kolkata	2008	1028	1	10
United B of India	N	New Delhi	Allahabad Bank	Kolkata	2006	105	8	17
United B of India	N	New Delhi	Allahabad Bank	Kolkata	2008	1030	6	24
HDFC Bank	P	New Delhi	Allahabad Bank	Kolkata	2006	109	6	11
HDFC Bank	P	New Delhi	Allahabad Bank	Kolkata	2007	156	4	9
ICICI Bank	P	New Delhi	Allahabad Bank	Kolkata	2006	101	3	8
ICICI Bank	P	New Delhi	Allahabad Bank	Kolkata	2007	152	1	7
Axis Bank	P	New Delhi	Allahabad Bank	Kolkata	2006	104	2	13
Bank of Baroda	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**143**	**4**	14
Bank of Baroda	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1063**	**11**	23
Bank of India	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**145**	**0**	0
Canara Bank	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**141**	**10**	18
Canara Bank	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1062**	**11**	21
Indian Bank	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1061**	**7**	26
Indian Bank	**N**	**New Delhi**	**Canara Bank**	**Mumbai**	**2009**	**1071**	**3**	14
SBI	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**144**	**0**	4
SBI	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1065**	**0**	4
SBI	**N**	**New Delhi**	**Canara Bank**	**Mumbai**	**2008**	**23500**	**5**	12
Syndicate Bank	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**147**	**0**	11
Syndicate Bank	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1066**	**2**	7
United B of India	**N**	**New Delhi**	**Canara Bank**	**Mumbai**	**2009**	**1080**	**10**	20
United B of India	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**146**	**7**	17
United B of India	**N**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1067**	**5**	24
Axis Bank	**P**	**New Delhi**	**Canara Bank**	**Mumbai**	**2009**	**30000**	**2**	13
ICICI Bank	**P**	**New Delhi**	**Central Bank**	**Mumbai**	**2007**	**142**	**4**	9
ICICI Bank	**P**	**New Delhi**	**Central Bank**	**Mumbai**	**2008**	**1064**	**3**	7

'F' means foreign banks
'N' means public sector banks
'P' means private banks
'' means that these cheques got cleared under speed clearing*
The time highlights in blue represents more than 10 days
The time highlights in yellow represents more than 7 days but less than 11 days

Appendix I

NATIONAL CONSUMER DISPUTES REDRESSAL COMMISSION NEW DELHI

CONSUMER COMPLAINT NO. 82 OF 2006

Atul Nanda & Anr.   …   Complainants
Versus
Reserve Bank of India & Ors.   …   Opposite Party

BEFORE :
      HON'BLE MR. JUSTICE M.B. SHAH, PRESIDENT
      HON'BLE MRS. RAJYALAKSHMI RAO, MEMBER
      HON'BLE MR. JUSTICE K.S. GUPTA, MEMBER

For the Complainants :   In person

For the Opp. Parties   :   Mr.Avneesh Garg, Advocate for OP 1 (RBI)

Mr.S.L. Gupta, Advocate & Mr.   R.K. Dikshit Advocate for Opp. Parties 3,18,21,36,37,38,39,41,43,69
Mr.Harsh Jha and Mr.Dhruv Mehta, Advocates for OP 4
Mr.R. Majumdar, Advocate for OPs 5, 10, 14
Mr.P.B. Agarwala, Advocate for OPs 6, 60
Mr.V.K. Tandon, Advocate for OP 7
Mr.Pradeep Dewan, Mr.Anupam Dhingra, Advocates for OP 8
Mr. Rohit Madan, Advocate for OP 9
Mr. Bishwajit Bhattacharya, Sr.Advocate with Mr. Debashish Mukherjee, for OP 12
Mr. Rambir Singh and Mr.Kunal Tandan, Advocates for OP No.13
Mr.Krishna Mohan, Advocate for Mr. R.N. Rout, Advocate for OP 15
Mr. Saran Suri, Advocate for OP 16
Mr.H.D. Talwani, Advocate for OP 17
Mr.Anshu Mahajan, Advocate for OP 19
Dr.Sunil Narula, Advocate for OP 20
Ms.Richa Choudhary, Advocate for OP 22, 32 and 57
Mr.Ajay Monga, Advocate   for OP 23, 29
Mr.Dharam Dev, Advocate for OP 25, 55
Mr. Abhishek Kumar, Advocate for OP 26
Mr. S.S. Salooja, Advocate for OP 27
Mr.Rajender Kumar, Advocate for OP 30 and 33
Mr.P.S. Shetty, Advocate for OP 35
Ms.Deepti and Mr.P.I. Jose, Advocates for OPs 40 and 47
Mr. D.P. Chaturvedi, Advocate for OP 44
Mr. S.K. Garg, Advocate for OP 45
Mr. Dveep Ahuja, Advocate with
Mr. V. Ramakrishna, Manager (Legal) for OP 46
Mr.Vijay Kumar, Advocate for OP 48
Mr.Devendra Sain, Advocate for OP 49
Mr.K.J. Naik and Mr.Subhash Chand, Advocates for OP 51
Mr.J.Pradhan, Advocate for OP 52
Mr. K.K. Mani, Advocate for OP 54
Mr.Manoj Arora, Advocate for OP 56
Mr. Vijay Kumar Gupta, Advocate for OP 63

Mr.L.K. Bhushan and Mr.Anshu Bhanot, Advocates for OP 66
Ms. Nirmal Mishra, Advocates for OP 76
Mr.Manish Khandelwal, Advocate for OP 79
Ms.Surekha Raman, Advocate for OP 88 and 90

27.08.2008

ORDER

Heard the learned counsel for the parties.
The question which requires consideration in this complaint is whether a consumer can seek any relief in cases:

i)   where there is delay in encashment of local cheques and long delay in clearing of outstation cheques ; and
ii)   non-payment of interest/compensation for such delay.

In this complaint, after issuance of Notice and after hearing the learned counsel for the Reserve Bank of India (hereinafter referred to as the RBI for short) and various other banks, on 9.11.2006, inter alia, the following order was passed :

"It is the contention of the complainant that despite the various Committee Reports, appropriate action is not taken by the Reserve Bank of India (RBI) with regard to recommendation for introduction of policy to curtail Banks' enjoyment of float funds. Relevant part of the same is as under :

"Need for introduction of policies to curtail bank's enjoyment of float :

The need for passing the interest benefits to payees on their cheque proceeds once the payee's bank (and not payees' account) receives credit from the drawee bank is of significant consequence. No passing of such interest benefits to the customers allows the banks to enjoy float and leads to undue enrichment of banks at the cost of their customers. Presently, as per data available (See Appendix C), in one year nearly 13,000 lakh cheques are cleared attributing to a total amount of more than Rs.1,13,37,000 crores. Giving benefit of doubt to banks and considering that for at most 50% of the cheques banks are not enjoying any kind of float, it would mean that on an average the banking sector enriches itself (at the cost of its customers) to the tune of at least one days interest on at least 56,68,500 crores. On this one-day's interest, even at a conservative rate of interest of 4% per annum, amounts to more than Rs.621 crores. In fact the empirical study presented in Section 5 indicates that, on an average, the float enjoyed by banks is 4 and 6 days (while they take 11 and 16 days for collecting cheques) for metro and state capital respectively. For other centers it would be anybody's guess what the float period could be!

The totality of huge float being enjoyed by banks is actually an unaccounted credit taken from the depositors without their explicit consent. The vital question here is why are the banks being allowed to enjoy even one-day's float?"

He further submitted that the vital question, why the Banks are being allowed to enjoy even one day's float, is required to be answered by RBI. For this purpose, the complainant submits that RBI itself has issued circular dated 1.11.2004 to all the Scheduled Commercial Banks, wherein it is stated as under :

"Adequate care also may be taken to ensure that the interests of the small depositors are fully protected. The policy framed in this regard should be integrated with the deposit policy formulated by the bank in line with the IBA's model deposit policy. The policy should clearly lay down the liability of the banks by way of interest payments due to delays for non-compliance with the standards set by the banks themselves. Compensation by way of interest payment, where necessary, should be made without any claim from the customer."

The complainant submits that this particular part is still not implemented by various Banks.

As against this, learned counsel appearing on behalf of the Banks submit that at least 80 Banks have formulated their own policy and are following the same.   They have produced a note issued by Indian Banks' Association (IBA) wherein it is contended that the data given by the complainant is incorrect.

Prima facie, it appears that even though the Banks have formulated their own policy with regard to float fund, credit is not given to the payee immediately and the interest thereon is also not paid and, hence, the Banks enjoy the said fund without paying any interest.

Considering the aforesaid aspect, Central Government and RBI are directed to state on affidavit as to what steps can be taken for minimizing the loss to the consumers because of the floating fund. Further, RBI should state on affidavit whether the Guidelines issued by it are properly implemented by the Banks by framing reasonable policies in conformity with the Guidelines.

Some of the officers of different Banks, who are present in the Court submits that with regard to the local clearance of cheque, as soon as the cheque is presented/deposited for clearance with the Bank, credit is given but the funds are not allowed to be withdrawn till the amount is received by the Bank and, therefore, there is no loss of interest to the customer.

Prima facie, it is apparent that this policy followed by some Banks is required to be uniformly adopted by rest of the Banks.

Thereafter, various orders were passed from time to time.

On 21.5.2007, after considering the affidavits and hearing the parties, the following order, inter alia, was passed:

"For the local cheques, it has been pointed out that most of the Banks who have filed affidavits and have stated that credit and debit of the cheques is being given or would be given on the same day.

In view of the aforesaid affidavits and the stand of the RBI, RBI to consider and decide whether appropriate guidelines can be issued for this purpose.

Regarding outstation cheques, RBI may find out solution so that there may not be any floating of money for a longer time."

By order dated 21.4.2008, we framed the question for decision in the matter with regard to the alleged float arising out of the delay due to non-clearance of outstation cheques for a long period. The question which was framed is as under :

"**Whether a consumer, who suffers in case when the cheque deposited by him for collection of amount is honoured by the drawer bank (say on 1.4.2008) and the information is received by the drawee bank (say on 15.4.2008), should get interest or whether no interest is payable to him by either of the banks (either drawer or the drawee bank) because it is a transit loss?**

Thereafter, the matter was heard on various dates and necessary directions were issued from time to time.

On 30.7.2008, after hearing the learned counsel for RBI and various banks, the following order, inter alia, was passed :

"**From the submissions made by the learned counsel for the banks, it appears that some delay occurs because of the clearing bank in clearing the cheques. Firstly, it is to be stated that the clearing bank is also expected to clear the cheques either on the date when it is received or on the next date but it has no business to keep the cheque uncleared for more than 48 hours. If they cannot do such business then it is for the RBI to control such banks on the ground that they are not in a position to discharge their banking functions effectively. Normally it is expected that the cheque would be cleared at least on the same date when it is received or on the next day by the clearing bank.**

Next step would be its communication to the collecting bank. In this country, we have very good network of postal department. Any letter from one corner to the other corner of the country could be sent within a maximum period of 4 to 5 days. Therefore, even an outstation cheque which is to be cleared from a remote village also may not take more than 4 to 6 days time for its clearance. In addition to this period, it may take

further 5 to 6 days for its communication to the collecting bank. This would require that the collecting bank and the clearing bank would act promptly on receipt of the cheque and take steps for clearance as early as possible.

Therefore, to contend that such outstation cheque would require more than 14 days for its payment to the payee cannot be justified.

Hence, in our view, the order dated 14th July, 2008 does not require any clarification or modification.

However, it is directed that if there is any unjustified delay on the part of the clearing bank, the consumer should be informed about it, so that the consumer can take appropriate action or he could refer it to Ombudsman for taking appropriate action. In any case if it is informed to the consumer that the delay was on account of clearing bank, then for the unjustified delay by the clearing bank, the collecting bank would not be liable to pay interest beyond 14 days.

But, in above cases also, it should not exceed the period/days prescribed in terms of bank's policy and would pay interest as per its policy.

It is also made clear that if any bank receives the clearing advice from the clearing bank prior to outer limit specified in their respective policies, the credit shall be given on the same date or on the following date.

The banks shall file compliance report to the order dated 14th July, 2008 within a period of two weeks from today."

Today, it is pointed out that, to provide for the regulation and supervision of payment systems in India and to designate the Reserve Bank of India as the authority for that purpose and for matters connected therewith or incidental thereto, the Parliament has passed '*The Payment and Settlement Systems Act, 2007*' (hereinafter referred to as the Act for brief) which has come into force with effect from 12.8.2008. On the basis of the aforesaid Act, RBI also framed regulations, which have also come into force with effect from 12.8.2008.

Under the said Act, Reserve Bank of India (hereinafter referred to as the RBI for short) is required to provide regulations and supervision as stated in Section 10 of the Act. Section 10, inter alia, provides as under :
"10. *Power to determine standards* – (1) The Reserve Bank may, from time to time, prescribe-
(a)   …………………..
(b)   The timings to be maintained by payment systems;
(c)   The manner of transfer of funds within the payment system, either through paper, electronic means or in any other manner, between banks or between banks and other system participants;
(d)   Such other standards to be complied with the payment systems generally;
(e)   ………………………………"

Further, Section 18 of the Act empowers the RBI to give directions generally. RBI is also empowered to impose fine under Section 30 in appropriate cases. Under Section 38 of the Act, RBI is also required to make regulations, *inter alia*, for the format of payment instructions and other matters relating to determination of standards to be complied with by the payment systems under sub-section (1) of section 10.

Considering the wide powers, which are given to the RBI under the Act, we hope that RBI would try to control the float, if any, arising due to delay in payment of the amount in case of outstation cheques.

It is also hoped that the *"Challenges Ahead"* noted in the speech delivered by Mr. V. Leeladhar, Deputy Governor, RBI on 1.8.2008 at Mumbai, would be taken care of by the RBI as well as by all the banks. The said *"Challenges Ahead"* are as under :

"**We have no doubt covered considerable ground in modernizing our payment and settlement system. The banking system too has made considerable investment in the related infrastructure to upgrade the payment system. However, there are several challenges that need to be effectively addressed if the full benefits of the achievements so far are to be reaped.**

One of the main challenges in the payment system area is to promote large-scale use of the electronic modes of payment across the country and requires addressing the constraints that impede the adoption of this mechanism. To my mind, the primary reason for slow pace of adoption of the electronic modes of funds transfer, particularly in the retail segment, is the lack of education – particularly on the part of the bank staff at the branch level that have interface with the public. A survey conducted by one of the Regional Offices of the RBI in the recent past revealed that in the limited sample covered, there were several bank branches in the State which were not even aware of the National Electronic Fund Transfer System. The banks, therefore, need to make concerted efforts to increase the degree of awareness at the level of the branch staff so that the electronic fund transfer services percolate down to the level of the public in a significant manner.

The other side of the coin is the lack of customer education and awareness about the features and benefits of the EFT, which precludes wider adoption of this product and leads to carrying on with the traditional modes of payment. I would, therefore, like to urge upon the banks to launch a systematic educational campaign for their clients to educate them of the suite of electronic products offered by them. This would not only reduce the avoidable paper work in the operation of the banks but would also improve the quality of customer service and eventually, business volume.

In so far as the RBI is concerned with a view to promoting the electronic payment culture and to make it more user-friendly, the RBI has intervened and mandated reasonability in pricing of transactions effected through ATMs and compulsory use of electronic mode for transactions above a specified threshold. The service charge levied on banks by the RBI for ECS, EFT / NEFT and RTGC transactions has been waived until March 2009, so that this benefit of reduced costs is passed on to customers, and the right incentive framework is created for the use of electronic retails payment products. Similarly, the limits set for ECS and EFT / NEFT transactions were also dispensed with in November 2004 with a view to expanding the user base. This, of course, is apart from various measures taken by the RBI for strengthening the payment systems infrastructure in a variety of ways.

Although the share of electronic payment products is improving in the overall retail segment, the share of public sector banks in this area is very low even as the number of branches offering the electronic payment facility is increasing. It is, therefore, necessary to make these products available across all bank branches. There is also a need to focus on expanding the geographical reach of the electronic payment services so as to include the segments of the population not yet toughed by it. It is difficult to achieve financial inclusion without encompassing rural-India in the payment system out-reach and the banks that do so first, will reap the rewards of the 'first-mover advantage' in terms of higher market share, with the concomitant increase in business and revenues. And as we all know, the electronic payment medium is not only speedier and more efficient, but is also more environments friendly as it reduces the reliance on paper required for effecting payments. It is our vision that electronic products reach a level of 50% by volume and 95% by value of the aggregate payment system transactions in the country, the end of March 2009.

Then, there are also some nagging efficiency issues in the payment system. Whilst the current clearing cycle of T+1 basis for the cheques payable locally, compares favourably with the best in the world, it is necessary to look into the entire cheque collection cycle – from the time a customer deposits a cheque at a branch till the point of realization of credit in his account. There is perhaps scope for continuous improvement in overall collection cycle. Going by the number of complaints received, it appears that customer-service in this area is not very customer-centric."

We further reiterate that the following order, which was passed by this Commission on 14.7.2008, shall be implemented by all the banks :

"On the basis of the various policies framed by the Banks and the RBI directions, it is directed that:

(a).   For the local cheques credit and debit shall be given on the same day or at the most on the next day.

(b).   The maximum period for collection of outstation cheques shall be 7/10/14 days. And, if there is any delay in collection of the said chques beyond the period of 7/10/14 days, interest at the fixed deposit rate, or at a specified rate as per the respective policy of the banks, is to be paid to the payee of the cheques;

(c).   The salient features of the policy with regard to the collection period of outstation cheques and interest payable thereon in case of delay shall be published on the notice board in a precise manner in bold/visible letters at conspicuous place in every branch.

All the banks are, therefore, directed to comply with the same within a period of two weeks, if they have not complied with the aforesaid RBI directions uptil now.

(d).   A copy of the complete policy shall be made available by the Branch Manager, if the consumers require the same for reading.

(e).   The salient features highlighting the rights of the consumers shall also be displayed on the notice board of each branch of the Banks.

(f).   Needless to say that the RBI would monitor the directions given by it as well as this Commission."

By our order dated 19.8.2008, we had directed the State Bank of India (SBI), Standard Chartered Bank and HSBC Bank to publish the operative part of our order dated 14.7.2008 at their joint cost in at least two leading newspapers which are published from Delhi and Mumbai. Learned counsel for the SBI submitted that the said order has been complied with. He has also produced a photocopy of the said publication issued in the Delhi Edition of the Times of India and Indian Express dated 27.8.2008. The same is taken on record. The cost incurred by the SBI in publishing the same shall be equally shared by SBI, Standard Chartered Bank and HSBC Bank, as agreed. It would be open to the SBI to recover the said amount from the aforesaid two banks.

This complaint, at this stage, stands disposed of accordingly. It would be open to the complainant and/or voluntary consumer organizations to approach this Commission in future for appropriate relief, in case, there is deficiency in implementation of the Act and its Regulations (as defined in Section 2(1)(g) of the Consumer Protection Act).

We appreciate the hard work done by the complainants in drawing our attention to various reports and making the consumers aware of their rights.

<div align="right">

…………………………………….J.

(M.B. SHAH)

PRESIDENT

…………………………………………

(RAJYALAKSHMI RAO)

MEMBER

…………………………………….J.

(K.S. GUPTA)

MEMBER

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