

A proposed framework for the implementation of monetary policy in the Large Value Transfer System environment

Discussion Paper 1
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1 The payments system influences monetary policy implementation

The Canadian Payments Association (CPA) is currently working towards introducing an electronic system for the transfer of large value payments, the Large Value Transfer System (LVTS), in the first half of 1997. This paper proposes a framework for the implementation of monetary policy in an environment where a significant proportion of the value of payments clears through the LVTS. It also indicates areas where the Bank seeks input on operating arrangements for which there is more than one option.

The current environment, where paper-based payment items clear and settle on a retroactive (back-dated) basis, is characterized by uncertainty about the level of settlement balances during, and at the close of, the business day. This uncertainty reflects the fact that the net outcome of settlements and of the Bank of Canada's drawdown or redeposit of government balances is not known until the following morning. In contrast, participants in the LVTS would have accurate information about payment flows affecting their settlement balances throughout the day and would know with certainty their final LVTS balance at the end of the day.

The proposed framework for monetary policy implementation in the new environment would allow the Bank to influence the overnight interest rate in a simple and transparent manner. The framework has been designed to encourage participants to deal directly with each other and with the market in general, rather than with the Bank of Canada, when they adjust their surplus or deficit positions.[1]

2 Key features of the proposed framework

2.1 Operating range

As the centrepiece of its policy implementation, the Bank of Canada would announce a 50-basis-point operating range for the overnight interest rate in the money market.[2] The upper and lower limits of the range would be established by the rates applied to the deficits and surpluses of the participants with the Bank of Canada following settlement of the LVTS, rather than through the rates signalled by open market operations in the overnight market as is currently the case.[3]

The rates applied to participants' positions with the Bank of Canada would be expected to establish the boundaries of the operating range for the following reasons:

- Deficits on the books of the Bank of Canada at the end of the LVTS day would be financed at the Bank Rate, defined as the upper end of the operating range, by a collateralized overdraft as per existing rules. That is, participants would be able to finance a deficit at the end of the day at the Bank Rate upon presentation of eligible collateral to the Bank of Canada. This would likely put a cap on the rates they would be prepared to pay during that day for overnight borrowings in the market.
- Participants with surplus balances at the end of the LVTS day would receive interest on these balances at a rate 50 basis points below the Bank Rate, i.e., the bottom of the operating range.[4] A participant would therefore be unlikely to accept a lower rate on its overnight funds from a borrower in the market. Thus, the floor on overnight rates would probably be the Bank Rate less 50 basis points.
- Changes in the operating range, and hence in the Bank Rate, would typically be announced early in the morning of the effective date. In the event of a shock during the day that required an immediate policy response, the Bank would announce a change in the operating range effective the next day. Although in this case overnight rates would not reflect the new operating range until the day after the announcement, short-term rates, e.g. at the benchmark 1- and 3-month maturities,

would adjust at once. In both cases, the rates applicable to accounts at the Bank of Canada at the end of the day would be known with certainty by money market traders early in the day.

2.2 Pre-settlement trading

As explained in section 3, the overall supply of settlement balances would be precisely controlled by the Bank of Canada. In general, the level of settlement balances in the system would be maintained at zero each day so that overnight rates in the market would typically be within the band and not at the boundaries.

The LVTS would have a pre-settlement trading period of about half an hour, after the close of client business (6 p.m. eastern time). Pre-settlement trading would allow each participant to achieve a zero balance, regardless of the distribution of client payments. Participants in surplus as a result of client transactions could lend to those with deficits, and movements in interest rates would be constrained by the limits of the operating range.

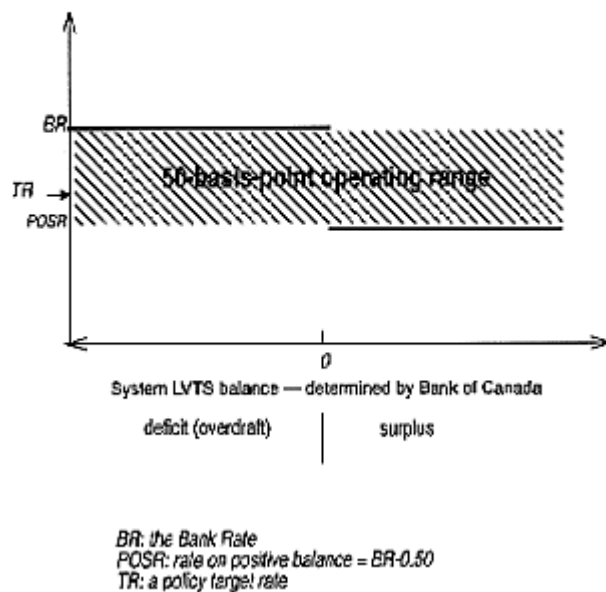
2.3 Target rate for the overnight interest rate

Within the operating range of the proposed system, the Bank would offer limited amounts of SPRAs or SRAs to signal a specific policy target rate. These open market operations would occur at a regular time in the morning, say 9:00 a.m.

2.4 An illustration of the framework

The system framework is illustrated in Figure 1. The existence of a 50 basis point spread between the rate charged on overdrafts (BR) and that paid on surpluses (POSR) would provide a fairly strong cost incentive for participants to deal in the market rather than to rely on the central bank, and the cost of overnight loans in the market would thus fluctuate between the rate on positive settlement balances and the Bank Rate. Since the typical spread between bids and offers on overnight funds in the market is not more than 1/8 per cent, in principle it should always be possible for lenders and borrowers to negotiate a rate that is mutually more favorable than the rates available at the Bank of Canada. Thus, the rate spread at the central bank would encourage the participants to hold a zero balance every day, and the Bank would expect only minimal use to be made of its end-of-day facilities. If substantial overdrafts and positive balances were to become common, the Bank would take this as evidence that the 50 basis point spread was too narrow. In Figure 1, TR depicts a policy target rate signalled by either SPRAs or SRAs. On any given day there would be only one policy target rate.

Figure 1
Operating range and policy target for the overnight rate



3 Process for neutralizing government and Bank of Canada flows

In aiming at a zero settlement balance for the system each day, the Bank would have to neutralize certain public sector flows that affect the financial system. These include all receipts and disbursements of the federal government as well as the Bank of Canada's own transactions. The government flows potentially affect settlement balances because the Bank acts as the government's banker. Thus, a net disbursement by the government at the end of the day would increase the settlement balances of the participating

institutions in the absence of any offsetting transaction by the Bank; a net receipt of the government would reduce their balances.

Public sector transactions that affect the financial system fall into two categories: those that would be transacted on the LVTS and for which the Bank of Canada would receive full information at the time the actual payments were made (at the very latest); and those paper-based payments and receipts for which the Bank would acquire full information by about 3 p.m.

Transactions made through the LVTS would include foreign exchange intervention, issues and retirements of marketable government debt, the Bank's own open market operations and most large federal government disbursements and receipts. These transactions would settle either directly via the LVTS or through other clearing and settlement systems that themselves settle through the LVTS.

Paper-based items would include many smaller government transactions such as personal taxes, pension payments and Canada Savings Bonds sales and redemptions. The Bank of Canada would be able to calculate the net effect of such government receipts and disbursements before the end of the day because the clearing institutions would continue to present such government items to the Bank by about 3 p.m. each afternoon, a practice known as *pre-presentation*. Settlement for these items would take place the same afternoon, by means of one or a limited number of LVTS payments per participant.[6] These transfers would cover the payment obligations in favour of the participant or the government.

The Bank would therefore have full information on the net effect of all public sector flows affecting the financial system on a given day. It would neutralize the net receipt or disbursement accurately in its setting of the level of settlement balances for the system before the pre-settlement trading period.

Two options are being considered for the neutralization instrument:

- **Transfers of government deposits - the traditional instrument for setting the level of settlement balances in Canada.** The current *drawdown and redeposit mechanism* for transferring government deposits would have to be changed because, on a day with a net disbursement from the government, the Bank would not be able to "draw down," i.e., debit, the government's account with a participant.[7] One option for transferring government deposits would be to auction the government's demand balances every day for same-day settlement through the LVTS. In effect, these deposits would become overnight deposits with maturing amounts transferred back to the books of the Bank of Canada and new deposits transferred to the government's accounts with the participants who bid successfully at the auction.[8]
- **Open-market buyback operations - purchase/resale transactions (PRTs) or sale/repurchase transactions (SRTs).** In the case of a net government disbursement the Bank would offer a fixed amount of SRT, rather than transferring government deposits to its own books. A fixed amount of PRT would be offered if the government had a net inflow of funds. Such operations would not be confused with the SPRA or SRA intervention which occurs at about 9:00 a.m. to indicate the target overnight rate, because the SRTs or PRTs would be held later in the day.

4 Treatment of balances from the process of clearing paper-based payment items

Paper-based payment items such as cheques are currently cleared overnight, using the Automated Clearing and Settlement System (ACSS) and this system will remain in place. Two options would be available for the dating of these entries, as illustrated in Figures 2 and 3:

- **Next-day settlement (Figure 2).** The netted payment obligations from the ACSS could be settled each morning by a transfer of LVTS balances, with no back-dating. There would be no separate balances for the ACSS on the books of the Bank of Canada; the entire payments system would settle each evening at the close of the LVTS. Although this approach would simplify matters from the viewpoint of the Bank of Canada and of the cash managers of the participating institutions, who would need to concern themselves with only one balance, next-day settlement might present difficulties to the clearing institutions. If financial institutions continued the practice of giving same-day credit to customers when they deposit cheques, some payment float would develop as

participating institutions themselves would not receive credit at the Bank of Canada until the next day. In the system as a whole, however, credit float would generally equal debit float.

- **Retroactive settlement (Figure 3).** The current practice of retroactive settlement for the ACSS balances could be continued. Paper-based payment items delivered to participants for credit on a given day would result in changes in the balances held at the Bank of Canada dated that same day, even though the clearing results would not be available, and settlement not completed, until the next morning.[9]

The ACSS balance for day T would be established after settlement on day T + 1 (e.g., at 8 a.m. or midday). A participant with a positive balance could instruct the Bank of Canada to transfer that balance to the LVTS on day T + 1. A participant with a negative balance would require a collateralized overdraft loan from the Bank of Canada dated day T and would be required to repay that loan via the LVTS before the close of regular hours on day T + 1 with accrued interest. Therefore, the balance for the LVTS at the close of day T + 1 would effectively incorporate the ACSS balances (negative or positive) from day T.

If the retroactive settlement convention were retained, settlement balances arising from the ACSS clearings would be treated differently from settlement balances arising from the LVTS mechanism. Moreover, the rate spread at the central bank facilities would be wider for ACSS balances than for LVTS balances.[10] As a result, the overnight rates on deposit and loan transactions settled via the ACSS could vary over a wider range than those settled through the LVTS. However, it would be expected that most market-related transactions would be settled through the LVTS, and this is where the Bank would focus its monetary policy operations. It would also be expected that most large overnight deposit and loan transactions settled via paper-based items would be those between participants wishing to offset expected gains/losses in the paper clearings in order to avoid the costs of surpluses or deficits.[11] The Bank of Canada would not regard the interest rates emerging from these trades as significant indicators of the cost of overnight financing, especially as the market would be quite thin and very sensitive to transitory technical factors.

Figure 2
Payments cycle: LVTS and next-day ACSS settlement
 (times approximate)

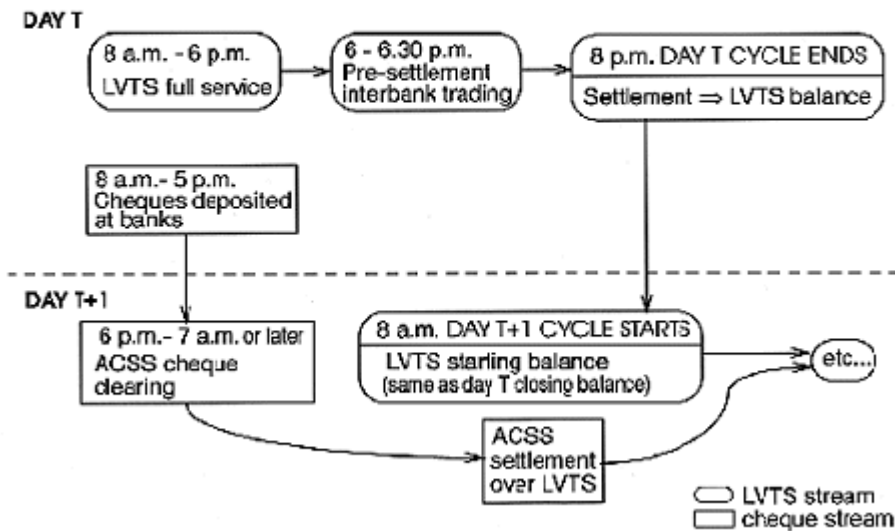
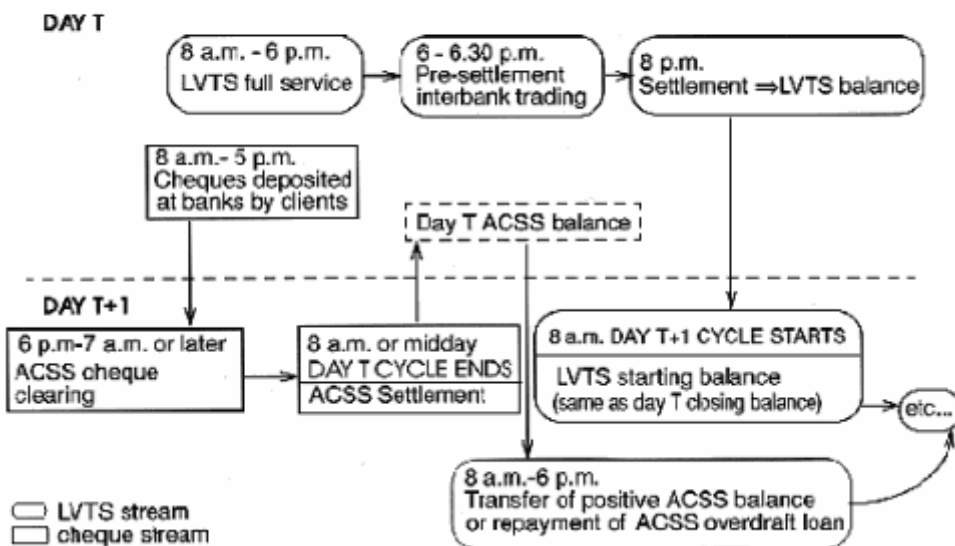


Figure 3
Payments cycle: LVTS and retroactive ACSS settlement
 (times approximate)



Endnotes

1. The term participants is used in this paper for those members of the CPA that are direct participants in the LVTS. These institutions would settle directly on the books of the Bank of Canada.
2. The Bank of Canada currently calculates the average cost of overnight financing for non-bank jobbers as a measure of the overnight rate. Dealers obtain overnight funds from call loans, buyback arrangements (repos), and swapped foreign exchange funds. There is also a large overnight market for wholesale and interbank deposits, which are not collateralized, and which are not included in the Bank's measure. As a result of differences with respect to legal format, collateral requirements, etc., interest rates on the various overnight instruments may differ slightly. However, all the principal overnight rates move closely together because of market arbitrage, and the modest differentials are not important from the viewpoint of monetary policy. The Bank will consider changes to the measurement of the overnight rate to take account of the changing financial environment.
3. Currently, the Bank announces changes in its operating range by intervening in the money market with offers of Special Purchase and Resale Agreements (SPRAs) or Sale and Repurchase Agreements (SRAs) to signal the new upper or lower limit.
4. The end-of-day LVTS balances described in this paper should not be confused with the interest-bearing Special Deposits at the Bank of Canada. These Special Deposits are to serve as collateral in support of intra-day credit in the LVTS and in other clearing and settlement systems that clear or settle payment obligations.
5. As is now the case, paper-based items not presented to the Bank of Canada by the 3 p.m. cutoff time would remain with the financial institution overnight and therefore would not affect the level of settlement balances in the system on that particular day.
6. Ideally, a single payment order would be made to cover the netted payment obligation in favour of either the government or the participant. There may, however, be some system restrictions that would require, at the very least, a net disbursement and a net receipt transfer.
7. The LVTS is a credit-push rather than a debit-pull payment system, i.e., a system where the payer's financial institution initiates the transfer of funds to the payee's institution, rather the reverse as is the case with the current mechanism for clearing payment items.

8. The government would continue to auction balances that were in excess of its daily operating requirements through a term deposit auction. The difference between the maturing and new amounts of the government's demand plus term deposits tendered for auction would represent the neutralization of the net government disbursements of receipts and of any Bank of Canada flows for the day.

9. In the context of the LVTS, a CPA working group is considering advancing the close of the ACSS cycle to 8 a.m. from the current midday settlement.

10. There are two alternatives for the treatment of ACSS balances with retroactive settlement. The first is similar to the current treatment of settlement balances. That is, no interest would be paid on positive balances, a charge of Bank Rate would apply to any overdraft and, in addition, the Bank Rate would be charged on any cumulative deficit over a calculation period. At the extreme, a positive balance would have an opportunity cost of the market rate and an overdraft would have a net cost of roughly the Bank Rate. Alternatively, under a system with no calculation or averaging period the Bank would compensate positive balances at a certain percentage below the lower end of the operating range (POSR) and, for an overdraft loan, would charge the Bank Rate plus the same percentage.

11. Deficits and surpluses among the clearers from the ACSS would automatically sum to zero, since all government and central bank items would clear through the LVTS (as describe in Section 3.)