

# How the Bank of Canada Creates Money

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November 22, 2020

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## 1. INTRODUCTION

This paper provides a general understanding of the process by which the Bank of Canada (BoC) creates money through large scale asset purchases. It categorizes each of the different types of operations into three distinct “methods”, and describes each of these methods in a way that is meant to be understandable to the generalist reader. This paper is descriptive in nature and does not delve into the correctness of specific policy actions, nor is it prescriptive regarding the potential for future policy actions by the Bank of Canada.

When the Bank of Canada creates money through large scale asset purchases, they can potentially create two types of money:

- 1) Settlement Balances
- 2) Broad Money

Settlement balances are equivalent to “reserves” in many other countries, and are a form of money that exist only in the settlement accounts that commercial banks and the Government of Canada (GoC) hold at the Bank of Canada. Broad money, on the other hand, is the type of money that average Canadians see in their bank accounts and use to purchase goods and services on an everyday basis. Settlement balances, generally speaking, can be thought of as money for banks and the Government of Canada, while broad money can be thought of as money for the general population.

While settlement balances are only ever transferred between commercial banks and the government (and never between the non-bank private sector), they are still balance sheet assets that can be used to “spend” within the private sector. This paper will explain this process in detail and will be careful to differentiate between the two types of money (settlement balances and/or broad money) that are created as part of each of the three methods.

## 2. METHOD 1: ASSET PURCHASES DIRECTLY FROM THE FEDERAL GOVERNMENT

### Money Created Directly by the Bank of Canada

When the Bank of Canada purchases assets directly from the Government of Canada, they pay for these transactions by creating settlement balances in the account that the GoC hold at the BoC. This account is known as the Consolidated Revenue Fund (CRF), the deposits of which are assets of the government and liabilities of the BoC. Money in the CRF account is a liability of the BoC because it is money owed to the GoC, on demand, the moment the government withdraws the money. The CRF is a settlement account,

the funds of which can be transferred both to and from settlement accounts that commercial banks hold at the BoC.

When the BoC purchases a \$1M government bond or bill directly at auction in the Primary Market, it credits the government's account at the BoC with \$1M of deposits, and the BoC, in return, acquires \$1M of GoC bonds or bills. At the end of the transaction the net worth of the BoC remains unchanged, with a corresponding increase in both assets (the bond or bill) and liabilities (the deposit now owed on demand to the government, held in its account at the BoC). The government, similarly, experiences no change in its net worth as a result of the transaction, acquiring an equivalent amount of assets (the new deposits in its account at the BoC) and liabilities (the money now owed to the BoC due to the bond sale). The resulting change to the BoC and GoC balance sheets is as follows:

Bank of Canada:

Change in Assets = +\$1M in government bonds

Change in Liabilities = +\$1M in government settlement balances in the CRF

Change in Net Worth = None

Government of Canada:

Change in Assets = +\$1M in government settlement balances in the CRF

Change in Liabilities = +\$1M government bonds

Change in Net Worth = None

At the end of the \$1M bond purchase, the government now has \$1M in newly created settlement balances in the CRF.

**Money Subsequently Created by the Government of Canada**

At first glance, it may appear that the bond purchase resulted only in new settlement balances being created for the government. This is an important point. If the operation were to stop here, the transaction would indeed result only in an increase in settlement balances, and not an increase in the broad money supply. In fact, there are times when the BoC undertakes operations to create money for the GoC for future contingency measures only, in which case the end result is an increase in settlement balances held in the CRF, and nothing more. However, to fully understand the implications of the money-creation process, it is necessary to look further to the precise moment when the government draws down their account at the BoC to spend the funds on goods or services.

When the government writes a \$1M cheque to the private sector, the individual or business deposits this cheque in their bank account at Bank A which causes an increase in their deposits by \$1M. This \$1M deposit is a liability of Bank A because it is money owed to the depositor, on demand, the moment the money is withdrawn. Bank A, of course, is not about to take on a liability without a corresponding asset, so \$1M of government deposits are subsequently transferred from the CRF to Bank A's settlement account at the Bank of Canada. The resulting change to the balance sheets of Bank A and the BoC are as follows:

Bank of Canada:

Change in Assets = None

Change in Liabilities = -\$1M in government settlement balances, +\$1M in Bank A's settlement balances

Change in Net Worth = None

Bank A:

Change in Assets = +\$1M in settlement balances (from the government CRF account)

Change in Liabilities = +\$1M in private sector deposits (broad money)

Change in Net Worth = None

And of course, by spending on goods and services in the private sector, the net worth of both the GoC and the private sector changes by offsetting amounts:

Government of Canada:

Change in Assets = -\$1M (deposits paid to Bank A's settlement account)

Change in Liabilities = None

Change in Net Worth = -\$1M

Private Sector:

Change in Assets = +\$1M (deposits received for goods or services rendered)

Change in Liabilities = None

Change in Net Worth = +\$1M

We can see now that as a result of the \$1M GoC bond purchase by the BoC in the Primary Market, not only have settlement balances increased by \$1M, but so have deposits. Consequently, when the BoC purchases bonds directly from the government and the government spends this money, it increases both broad money and settlement balances by an equal amount.

Note, however, that the GoC does not necessarily need to spend their newly created settlement balances in the private sector. In the past, such operations were conducted with the goal of providing the GoC with emergency liquidity, to be spent only in times of emergency. The Prudential Liquidity Management Plan (PLMP) of 2011, for example, resulted in an increase in government settlement balances, but no increase in the broad money supply. This is because the GoC merely held the settlement balances in the CRF as an emergency buffer and did not spend the PLMP funds into the private sector.

### **3. METHOD 2: ASSET PURCHASES FROM BANKS**

#### **Money Created Directly by the Bank of Canada**

Commercial banks hold settlement accounts at the Bank of Canada, which makes asset purchases by the Bank of Canada relatively straightforward. This is because when the Bank of Canada purchases assets from a commercial bank, it simply credits the bank's settlement account at the BoC. In this manner, the Bank of Canada gains an asset (the security purchased) and a corresponding liability (the newly created settlement balances), and the bank simply changes the composition of its assets (selling a security in exchange for settlement balances).

A transaction by which the Bank of Canada purchases \$1M in government bonds directly from Bank A results in the following balance sheet changes for Bank A and the Bank of Canada:

Bank A:

Change in Assets = -\$1M in government bonds, +\$1M in settlement balances (from the Bank of Canada)

Change in Liabilities = None

Change in Net Worth = None

#### Bank of Canada:

Change in Assets = +\$1M in government bonds

Change in Liabilities = +\$1M in settlement balances for Bank A

Change in Net Worth = None

Thus, operations by which the Bank of Canada purchases assets from a private bank result in an increase in settlement balances, and no immediate increase in broad money. For example, when the Bank of Canada implemented Quantitative Easing (QE) in 2020 in response to the COVID pandemic, they purchased assets directly from commercial banks in exchange for settlement balances. While different central banks have implemented QE in various ways, QE undertaken specifically by the BoC resulted in an increase in settlement balances only, and not a direct increase in the broad money supply.

#### **Money Subsequently Created by Private Commercial Banks**

Despite the fact that BoC asset purchases from banks result only in an increase in settlement balances, commercial banks nevertheless have the ability to “spend” their settlement balances in the private sector in the following manner.

When Bank A writes a cheque for \$1M to the private sector for goods or services rendered, that person or business will subsequently deposit this cheque in their account at Bank B and receive \$1M in deposit money. This \$1M deposit is a liability of Bank B because it is money owed to the depositor, on demand, the moment the money is withdrawn. Bank B, of course, does not simply take on a new liability without receiving a corresponding asset, so \$1M of settlement balances are subsequently transferred from Bank A’s settlement account at the BoC to Bank B’s settlement account at the BoC.

The net result of Bank A’s “spending” is thus a transfer of \$1M of settlement balances from Bank A to Bank B, and a new private sector bank deposit of \$1M (broad money) held in an account at Bank B. Thus, while BoC asset purchases from Bank A specifically resulted only in an increase in settlement balances for Bank A, if Bank A chooses to spend these settlement balances in the private sector, it has the potential to create an additional \$1M in broad money.

Note, however, that the original asset purchase of bonds by the BoC simply removed \$1M worth of bonds from Bank A’s balance sheet and replaced it with \$1M in settlement balances, leaving the net worth of Bank A unchanged. Because there was no change in wealth for Bank A as a result of the operation, there is likely little additional incentive for Bank A to spend their new settlement balances into the private sector. This is because had Bank A wanted to spend \$1M in the private sector prior to the bond purchase, they could easily have sold their \$1M of bonds in exchange for money and done so. The Bank of Canada’s asset purchases do not change this fact.

#### **4. METHOD 3: ASSET PURCHASES FROM NON-BANKS (EXCLUDING THE FEDERAL GOVERNMENT)**

##### **Money Created Directly by the Bank of Canada**

Because non-banks do not hold settlement accounts at the Bank of Canada, asset purchases by the Bank of Canada from non-banks happen differently than those from banks. When the Bank of Canada purchases an asset from a non-bank entity (such as a person, business, or institution), it writes a cheque to the non-bank entity who then deposits this cheque in an account held at Bank A. This causes a new deposit to be created for the non-bank entity and simultaneously creates a new liability for Bank A. In order to offset this new liability, Bank A takes this cheque to the Bank of Canada for payment, and the

Bank of Canada subsequently credits the settlement account that Bank A holds at the Bank of Canada with newly created settlement balances.

For example, at the end of a transaction involving a \$1M bond purchase by the Bank of Canada from a non-bank entity, the resulting balance sheet changes are as follows:

Non-Bank Entity:

Change in Assets = -\$1M in bonds (to the Bank of Canada), +\$1M in deposits

Change in Liabilities = None

Change in Net Worth = None

Bank A:

Change in Assets = +\$1M in settlement balances (from the Bank of Canada)

Change in Liabilities = +\$1M in deposits

Change in Net Worth = None

Bank of Canada:

Change in Assets = +\$1M in bonds

Change in Liabilities = +\$1M in settlement balances

Change in Net Worth = None

The above example shows that Bank of Canada asset purchases from non-bank entities directly increases both deposits and settlement balances commensurably. Not only did the \$1M bond purchase by the Bank of Canada increase broad money by \$1M, it also simultaneously increased bank settlement balances by \$1M as well.

### **Money Subsequently Created by Private Commercial Banks**

Bank A, of course, has the ability to subsequently “spend” their new \$1M in settlement balances into the private sector in an identical manner as described in Method 2 (Section 3). Should Bank A choose to spend their settlement balances into the private sector, they would be creating an additional \$1M in broad money in addition to the \$1M of broad money that sprung directly from the BoC asset purchase. Thus, the entire operation would create \$1M in broad money for the original seller of the bond, \$1M in settlement balances for the seller’s bank (Bank A), and \$1M in broad money for the person or business to whom Bank A subsequently wrote a \$1M cheque.

## **5. OVERVIEW OF BANK OF CANADA MONEY-CREATION**

Methods 1 through 3 describe the various ways that Bank of Canada asset purchases directly create money, including the type(s) of money created through each individual operation. Whether the end result is the creation of settlement balances, broad money, or both, depends entirely on the method utilized by the Bank of Canada. A summary is provided in Table 1 below.

**Table 1: How Money is Created by the Bank of Canada**

<b>Type of Bank of Canada Asset Purchase</b>	<b>Adds to Settlement Balances</b>	<b>Adds to Broad Money</b>
Method 1: Asset Purchases Directly from the Federal Government	X	
Method 2: Asset Purchases from Banks	X	
Method 3: Asset Purchases from Non-Banks (excluding the Federal Government)	X	X

As was described earlier in this paper, when BoC asset purchases create new settlement balances, the holders of these settlement balances have the ability to increase the broad money supply by writing cheques to the private sector against these settlement balances. Table 1 assumes that holders of settlement balances choose not to spend their settlement balances in the private sector. With respect to Method 1, the GoC may choose to hold settlement balances in the CRF rather than spend in order to maintain emergency liquidity. With respect to Methods 2 and 3, and as described earlier in this paper, commercial banks are unlikely to have any additional incentive to spend their new settlement balances in the private sector since asset purchases by the BoC generally do not result in a change in net wealth for commercial banks.

## **6. CONCLUSION**

When the Bank of Canada purchases assets from either the Government of Canada, private commercial banks, or private non-bank entities they create either settlement balances, broad money, or both. When the BoC purchases assets from the GoC, it creates settlement balances directly (called “Method 1” in this paper). When purchasing assets from private commercial banks, it also only directly creates settlement balances (called “Method 2” in this paper). However, when purchasing assets from the non-bank private sector, it directly creates both settlement balances and broad money (called “Method 3” in this paper). Furthermore, while the above applies to money directly created by the Bank of Canada, if holders of settlement balances created by the BoC subsequently write cheques to the private sector against these settlement balances, they automatically increase the broad money supply by an equivalent amount.