Financial Market Infrastructures and Payments: Warehouse Metaphor Textbook

Ron J. Berndsen

Answers to Exercises of Chapter 2

1. Banks can perform
   1. the issuer role which means providing services on the debtor side of the transaction and
   2. the acquiring role, providing services on the creditor side.

   In a C2B retail transaction, the Consumer is on the debtor side and the Business (merchant) is on the creditor side.

2. There are four types of fiat money stored in the Warehouse (see Table 2.1). banknotes and coins and electronic money (as defined in EU law) are stored on the ground floor. Commercial bank money mostly on the ground floor, but also on the middle floor (correspondent banking, see Chapter 3). Central bank money is stored on the middle floor (Chapter 3).

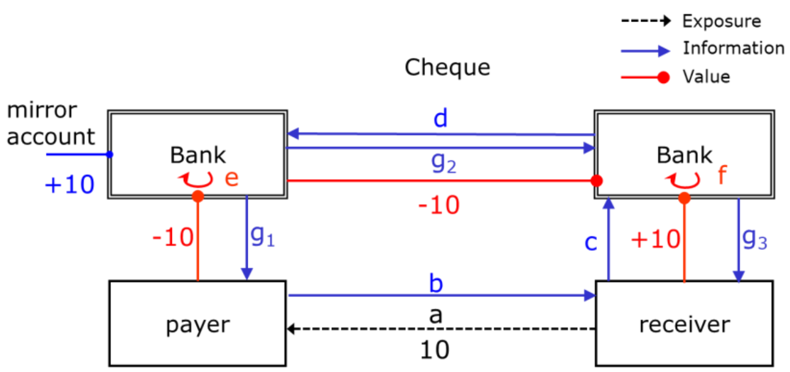
3. The central bank is the issuer of banknotes, so the answer to this question is affirmative. So currently there are two forms of central bank money: in paper form (banknotes) available to the anyone and in digital form (settlement accounts in central bank money, Chapter 3) available to banks only. In the future, central banks could decide to issue central bank digital currency (CBDC) which would fit in between the two existing kinds of central bank money: digital form and available to anyone.

4.
   (a) Not in any Warehouse as gold is not fiat money but a commodity or commodity money.
   (b) The Swiss (Franc) Warehouse
   (c) Not in any Warehouse as air miles are not money
   (d) The euro Warehouse
   (e) The euro Warehouse
   (f) In all Warehouses (US dollar, euro, Yen, Renminbi, Pound Sterling etc.) as all Warehouses have a central bank.

5. The main risks are counterfeit and a ``bad'' cheque.

6. There are three types of card fraud: 1) ATM fraud, 2) Point-of-Sale fraud and 3) online, by mail or phone (card-not-present fraud)

7. Four-corner model of a cheque payment:



a Obligation to pay from payer to receiver (e.g. invoice of 10)
b Payer writes cheque of 10 and sends it to the receiver
c Receiver deposits the cheque at receiver's bank
d Transmission cheque (or in digitized form) to payer's bank
e Debit payer's account and update mirror account
f Transfer of funds from payer's bank account to receiver's account
$g_{1,2,3}$ Information on payment (e.g. account statement)

8. The three corners are 1) the receiver's bank, 2) the payer's bank in the debtor role and 3) the receiver.

9. The answers to this question are obviously personal. The definitions of a retail payment can be found on page 7 of the book. An example of a C2C payment is transferring funds to a friend. Examples of C2B are your card payments or direct debits to pay for rent or utilities.

10. A B2B four-corner model credit transfer is for example relevant if a business purchases some raw material or intermediate goods from another business where those businesses have different banks. A four-corner B2B direct debit is for example relevant for recurring payments between two businesses where those businesses have different banks.

11. In the two-corner model the payer and the receiver are the same person, yet that person has two accounts with the same bank. A two-corner model payment is therefore a liquidity transfer. However, a liquidity transfer is not a proper retail payment because it is not the money leg of a one-sided financial transaction (see the definition on page 5).

12. The *n*-corner models are intended for describing book-entry payments and not for bearer instruments such as banknotes. Leaving that aside for a moment, you could picture the payment with a banknote as a two-corner model with a red arrow from payer to payee (to describe the transfer of the value embedded in the banknote) and a blue arrow in the same direction to signal awareness of the payee of the receipt of that banknote. If change is needed because the amount payable does not correspond with the banknotes(s) you also have to draw two arrows in the opposite direction with the change.
However, this presumes that the payer already has the banknote(s) at hand. So, you have to ignore the ATM process (which might make use of the same infrastructure as a card payment).

13. The card payment initiation stage and the actual payment stage. The purpose of the initiation stage is to provide the receiver (e.g. merchant) with a real-time payment guarantee so that the good or service purchased can be delivered immediately to the payer.

14. A bank is allowed to create fiat money on a net basis (in the form of bank deposits by e.g. making new loans); an Electronic Money Institution issues e-money one-for-one from incoming fiat money.

15. A bank may take deposits from and offer accounts to clients; a payment institution is not allowed to do so but uses an account at a bank to offer payment services to its clients.