Financial Market Infrastructures and Payments: Warehouse Metaphor Textbook

Ron J. Berndsen

Answers to Exercises of Chapter 5

1. The Warehouse i.e. elimination of settlement risk exposures would not be needed in an autarky where in addition over time settlement risk exposures would more or less cancel out. This is clearly theoretical as in practice trading with the outside world is needed and those exposures do not cancel out.

2. The two frictions are 1) time mismatch of trading demands and 2) limited enforcement of future behavior (see pages 79/80 for more explanation).

3. Settlement risk exposure and financial obligations are two sides of the same coin: if *a* has a settlement risk exposure on *b* of an amount *e* then *b* has a financial obligation of an amount *e* to *a*.

4. The settlement risk exposure emerges at the moment the transaction is agreed and – in case of successful settlement – the exposure is eliminated at the moment the sufficient settlement condition is fulfilled.

5. The necessary condition for settlement ensures that the transfer of value has indeed taken place (if successful). However. At that moment the receiver of the funds is not yet aware of that fact. After the receiver is informed of the successful settlement he or she is aware that the settlement risk exposure has indeed vanished. As a byproduct, the receiver can now reuse the funds immediately (assuming final settlement here).

6. This difference is important because nowadays in the digital world both value and information are stored in a computer's memory in binary format (except for banknotes) and are therefore hard to distinguish. Yet, it is important to separate the two because it is needed for determining whether the necessary condition for settlement has been fulfilled.

7. (a) Your bank account balance value (digital storage in your bank's computer)
   (b) Your statement of account information
   (c) Typing a transfer in your e-banking application information
   (d) Paying with a card in a shop or mobile phone information (payment initiation stage)
   (e) Merchant's bank account is credited value (digital storage in merchant bank's computer)

8. The *n*-corner models in Chapters two and three are based on the methodology, hence there are the three different types of relations (exposure, value and information) and two types of agents (banks/EMIs and payers/receivers).