

- We generate 12 instance sizes with different  $|M|$  and  $|N|$  as well as the consideration of unavailability and multiple cargo types within the time horizon of one week, shown as follows:

| Instance | $ N $ | $ M $ | Unavailability | Multiple cargo types |
|----------|-------|-------|----------------|----------------------|
| I1       | 6     | 3     | No             | Single               |
| I2       | 6     | 3     | Yes            | Single               |
| I3       | 12    | 3     | No             | Single               |
| I4       | 12    | 3     | Yes            | Single               |
| I5       | 18    | 3     | No             | Single               |
| I6       | 18    | 3     | Yes            | Single               |
| I7       | 6     | 5     | No             | Multiple             |
| I8       | 6     | 5     | Yes            | Multiple             |
| I9       | 12    | 5     | No             | Multiple             |
| I10      | 12    | 5     | Yes            | Multiple             |
| I11      | 18    | 5     | No             | Multiple             |
| I12      | 18    | 5     | Yes            | Multiple             |

- In **Figure. 4.3**, we compare the demurrage fee in four scenarios which differentiate in whether consider multiple cargo types and unavailability or not.