Working Party on Financial Statistics

Employee Stock Options A compilation strategy in Japan

Common day

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This document has been prepared by Yoshiko Sato (Bank of Japan) and will be presented under item 5 of the draft agenda

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Employee Stock Options
A compilation strategy in Japan

OECD WPFS held on October 1-5, 2012

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Outline

1. Introduction
2. ESO compilation strategy
   - Data sources
   - Assumptions
   - Marked-to-market valuation
3. Preliminary result of ESO estimation
4. Conclusion and future agenda
1. Introduction

- ESO has become a common way of compensation. Nearly 40% of listed companies has introduced ESO.
- 2008 SNA recommends that ESO should be recorded in the financial accounts.

Below Eurostat (2004) suggests as a practical guidance that ESO would be recorded as follows.

<table>
<thead>
<tr>
<th>Classification of the item</th>
<th>Vesting period</th>
<th>After the vesting date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Other accounts receivable and payable</td>
<td>Financial derivatives</td>
</tr>
<tr>
<td>Valuation</td>
<td>Fair value at grant date</td>
<td>Market value</td>
</tr>
</tbody>
</table>
2. ESO compilation strategy

Data sources

- Financial Statements Statistics of Corporations by Industry, Quarterly (FSSCIQ)
  - Released by the Ministry of Finance.
  - Estimated figures based on the sample survey for financial statements of corporations.
  - The outstanding amount of stock acquisition rights is available in FSSCIQ which corresponds to ESO.

- ESO in FSSCIQ is recorded on a book value basis.
  Accounting standards suggest that ESO should be evaluated at fair value when granted. They are not recalculated and information about the subsequent changes of the value after the grant date is not obtained from the financial statements.
2. ESO compilation strategy

- **Assumptions**
  - A general span of ESO life

Time to vest --- 2 years
Expected life --- 3 years from vesting date

In order to be tax qualified, ESO should be exercised on a date between 2 to 10 years after the grant date.
2. ESO compilation strategy

- A company is assumed to represent all listed companies at Tokyo Stock Exchange and to issue ESO.

- Given the assumption, market value of ESO can be calculated by using TOPIX (Tokyo Stock Price Index) and its historical volatility in a commonly used option pricing model.

- Marked-to-market vs. book value ratio can be obtained. The book value of FSSCIQ can be multiplied by the ratio and then it is converted to marked-to-market value basis.
2. ESO compilation strategy

- Marked-to-market valuation

- The aggregated ESO data on marked-to-market value

- The aggregated ESO data on a book value basis

- Market value of a virtual company’s ESO

- Book value of a virtual company’s ESO

- Marked-to-market vs. book value ratio

- FSSCIQ data
3. Preliminary result of ESO estimation

- The market value of ESO has been less than the book value reflecting the weak performance of the overall stock prices.
4. Conclusion and future agenda

Improvement is expected by some extensive studies.

• Robustness check of the use of stock price index
  ✓ ESO evaluation should be ideally conducted on an individual company basis. The strategy could be reinforced by checking whether the result would not significantly differ from what could have been obtained by using individual stock price and volatility data.

• Treatment of employee share/stock purchase plan
  ✓ Some companies offer to employees to purchase shares at concessionary rates. Although these schemes are another form of compensation to employees similar to ESO, compilers must check whether they are “options” and are qualified as part of ESO.
References


Thank you for your attention.