Notes on the Treatment of Employee Stock Options in Financial Accounts

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Summary

1. The treatment of stock options needs to be reexamined in order to record stock options as compensation of employees. It should be in line with the approach that, in principle, the SNA does not treat contingent assets as assets in financial accounts, but treats tradable financial derivatives as assets.

2. At the grant date (when stock options are granted to employees), stock options are interpreted as "options to acquire 'options to acquire stock at a certain price' without financial compensation". At the vesting date (when employees acquire claim to stock options), they are interpreted as 'options to acquire stock at a certain price'.

3. Only stock options at the vesting date should be treated as tradable stock options. Stock options at the vesting date should be recorded as financial assets in financial accounts, and treated as compensation of employee in income accounts.

I. The inclusion of stock options in financial assets

1) A stock option is a claim (option) for an employee to buy stock from his/her company/affiliates.

In recent years, business accounting has begun recording the expenses needed to cover stock options, and this has influenced the revision process of the 93SNA, in that recording methods of stock options (as compensation of employees) have become a big issue.

In the past, discussions on stock options had been made, mainly by reflecting real activities, but this paper discusses stock options theoretically, and focuses on the relation between stock options and financial accounts[1].

2) Recording of stock options as compensation of employees in income accounts requires recording of the same amount on the assets/liabilities in financial accounts.

When discussing how to treat stock options in financial accounts, consideration must be made to the division between contingent assets and 'assets that involve conditional rights similar to contingent instruments but have market value and are tradable', e.g. tradable financial derivatives. The SNA does not treat contingent assets as financial assets (SNA93 para11.25), but it treats tradable financial derivatives as financial assets (SNA93 para11.34).

The SNA treats financial derivatives that easily close out market participant's position in the market as 'tradable', and they include OTC <over-the-counter> instruments as well as listed instruments. Therefore, for instance, although guarantees of liabilities (bilateral contracts; not tradable) and credit derivatives (OTC instruments; tradable) have close economical functions, the SNA only treats credit derivatives as financial assets.

3) The term, 'tradable' should be defined as 'possible for market participants to trade (buy/sell) options whose contents are similar to the options that the participant originally traded (sold/bought)'. It does not mean 'possible for market participants to resell the options that the participant originally traded, to a third party' (see below for an example).

<An OTC option>

a) Market participant 'A' sells his/her option to market participant 'B'
b) 'A' wants to square his/her position.
c) 'A' achieves this not by short-covering from 'B'.
d) 'A' buys from market participant 'C', an option that has similar content to the option he/she sold to 'B'.

When trading normal options which are actively traded in the market, third parties need information such as stock price, volatility of stock, interest rate, strike price, expiration date, and so on, in order to measure the value of stock options. Third

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[1] From the viewpoint of compiling statistics, the possibility of data collection is important, together with logical consistency as explained in this paper, but the former has been omitted due to restriction in space.

parties can easily obtain the information from the market and the seller/buyer.

For a stock option to be treated as tradable, it is important that the content of its contract is not too specific so that third parties are able to check the value of the stock option easily and decide to sell/buy it.

4) Stock options are not always tradable in the way described in 3). Usually, contracts of stock options take the form of conditional contracts and in many cases, the first phase of the contracts includes conditions that are highly specific (e.g. an employee granted with stock option may be required to continue working at his/her company until he/she acquires claim to buy company stock), and this makes it difficult for third parties to measure the value of the concerning stock option.

5) If the SNA treats all stock options, including those at the first phase of a stock option contract, as financial assets, it needs to change the treatment of guarantees of liabilities from contingent assets to tradable financial derivatives.

The current SNA treats guarantees of liabilities as service output and service consumption, and does not recognize them as financial assets such as a kind of reserves. Should the SNA treat them as reserves, it would affect the essence of service output and service consumption in real activities, and the SNA would need to undergo an extremely large revision, including its most basic concept. This is inappropriate and not adoptable.

6) The explanation from 1) to 5) provides the following conclusions on the treatment of stock options in financial accounts of the SNA. Only tradable stock options which do not include highly specific conditions would be treated as financial assets in financial accounts. Under financial assets, tradable stock options would be classified as part of financial derivatives, as 'tradable, individual stock options'. The range of compensation paid to employees and date of payment would be defined as 'fair value of tradable stock options paid to employees' and 'the date of payment of tradable stock options'.

Following the conclusion above, the paper moves on to explain when and how stock options become 'tradable'.[2]

[2] As examined above, theoretically, it is not difficult to define 'tradable' in SNA. Tradable stock options do not include any highly specific conditions.
However, it is not easy to define 'tradable' when actually compiling statistics. Sometimes, it

II. Recording stock options (compensation of employees): when and how.

1) Economics interprets stock options as being composed of the combination of two options: "the option to acquire 'the option to acquire stock at a certain price' without financial compensation", and 'the option to acquire stock at a certain price'[3].

Stock option is a claim to buy stock (option with stock as underlying assets), and usually, the employee needs to meet (a) certain condition(s) (e.g. employee continues working at the company for a decided term, after being granted with option) to acquire that claim.

When an employee is granted with stock option, the employee only acquires "the option to acquire 'the option to acquire stock at a certain price' without financial compensation". The employee acquires claim for 'the option to acquire stock at a certain price' (usual individual stock option) only when the employee meets the condition(s) set by the contract of the stock option.

2) Below, is an example of a stock option program. The following three points have been assumed to simplify the explanation without affecting the essence of theoretical framework:

a) Only one employee acquires stock option.

b) The probability for the employee to meet the conditions to acquire the claim for 'the option to acquire stock at a certain price' is expected as 100%, at the 'grant date'.

c) The company's stock is listed and the option's fair value can be checked easily.

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may be difficult to decide whether stock options are 'tradable', especially for those with low liquidity such as: individual stock option with underlying assets of listed stock that are practically not traded, or individual stock option with underlying assets of unlisted stocks.
A third party could estimate the theoretical value of the former option, but as it has low liquidity and a low number of past transactions, there is a very low chance the estimated value will match the actual value. For the latter, it may be impossible to even make an estimation of its value.
Similar problems can be seen in currency options for example, where a currency option's underlying asset is minor currency.
The problem should be solved by considering which options are 'tradable' (i.e. financial derivatives under the SNA), from a practical viewpoints.

[3] 'the option to acquire stock at a certain price' is a claim to buy stock 'A' if the employee pays 'N' yen (price for stock 'A'). "the option to acquire 'the option to acquire stock at a certain price' without financial compensation" is a claim to acquire 'the option to acquire stock at a certain price'. It is realized not by paying money, but by continuing to provide labor for a pre-set period (not quitting the company).

<Example of stock option>

a) 1st April, 2004 (grant date)

Company grants an employee the claim to buy a million shares of company stock, for a thousand yen each, for the exercise period of 1st July, 2005 to 31st March, 2006, on the condition that the employee does not quit the company until 30th June, 2005.

Stock prices: 800 yen;

Fair value of the stock option: 30 million yen.

b) 30th June, 2005 (vesting date)

Employee acquires claim to buy company stock as a result of remaining at the company for the required period. Stock price is at 900 yen; employee does not exercise the option.

Fair value of the stock option: 70 million yen.

c) 31st March, 2006

Stock price reaches 1,200 yen; employee exercises option, and sells stock immediately to lock in profit.

Fair value of the stock option: 200 million yen (profit on sales: 200 million yen).

3) As long as a stock option is interpreted as an 'option', it is inappropriate not to acknowledge of its value until the employee exercises it. Under the SNA, stock option in the example can be recognized as financial assets by three methods, as shown in the table below (see appendices 1-3 for details). The dates represent the time when stock option is recognized as financial assets in financial accounts, and the time when compensation is paid to the employee in income accounts[4].

	'grant date' (Appendix 1)	'vesting date' (Appendix 2)	'grant & vesting date' (Appendix 3)
1st April, 2004	30 million yen		30 million yen
30th June, 2005		70 million yen	40 million yen

4) The three methods are explained below, with consideration to features of stock options in economics. As stated earlier in the paper, economics define stock options into two items: "the option to acquire 'the option to acquire stock at a certain price'

[4] Utsunomiya, Hagino and Nagano (2001) propose the grant date and the grant and vesting date methods as conceptual model. John Verinder (2002) proposes the vesting date while Eurostat (2004) suggest the vesting date, and grant & vesting date methods.
All researches seek the best way to interpret compensation of employees from the aspect of real activities. They all treat stock options as financial assets, as a given fact.

without financial compensation" and 'the option to acquire stock at a certain price'.

The 'grant date' method only recognizes "the option to acquire 'the option to acquire stock at a certain price' without financial compensation" as financial asset[5], while the 'vesting date' method treats 'the option to acquire stock at a certain price' as such. The 'grant & vesting date' method recognizes both options as financial assets.

Under the SNA, the 'vesting date' method seems to be the most appropriate method for treating stock options as financial assets. The reason is explained below, using the example above. The most important principle is that stock options need to be 'tradable' in order to be treated as financial assets in financial accounts.

Stock option should not be treated as financial asset at the grant date because the uniqueness of the condition set by its contract makes them inappropriate to be treated as tradable. At the grant date, the contract requires the employee to continue working at the company until 30th June, 2005, in order for the employee to be able to exercise "the option to acquire 'the option to acquire stock at a certain price' without financial compensation".

The fact that the employee stills works at the company is the most important element in the contract, while the stock price is the most important element in a contract of a normal option on specific stock.

Unlike stock prices, third parties do not have easy access to information whether the employee will continue to work at the company. This makes it difficult for them to measure the value of the stock options from the grant date to the vesting date (this period is referred to as 'first phase' in I.4)).

Stock option at the vesting date should be treated as financial asset. It is similar to normal options on specific stock, and it can be treated as tradable in the sense that the position originally created by the option can be canceled out by reversing trades. 'The option to acquire stock at a certain price' - which the employee acquires at the

[5] The grant date method can be interpreted as follows:
The method does not recognize changes that occur to the underlying assets according to the flow of time. Instead, it treats stock option as just one 'option that has underlying assets of stock'. Under this recognition, it treats the changes to the value of the three million yen after the grant date as changes of the value. The weakness of this interpretation lies in the fact that it fails to highlight that the stock options become tradable only from the vesting date, and not from the grant date.

vesting date - does not have unique conditions. Third parties do not need to obtain highly specific information to measure the value of stock options; they can easily obtain the information needed from the market and the seller/buyer.

5) From the explanation in II.4), it is now clear that the emergence and recording of the compensation of employees take place at the vesting date. The amount to be recorded as compensation of employees is the fair value of the stock option at the vesting date. It is 70 million yen, according to the example.

6) In the example, there is a period of more than one year between the time the employee begins providing work, i.e. grant date, and vesting date.

It may seem appropriate to record compensation of employees by dividing the amount evenly over the period that the employee provided labor, but in concept, the vesting date method seems to be the only appropriate method to be employed from the viewpoint of financial accounts..

The stock options acquired by the employee at the grant date and the vesting date have essential differences.

When the employee acquires stock option at the grant date, he /she is not able to exercise the option, unless the employee meets the condition set by the contract of the stock option. The employee has acquired contingent asset that should not be recorded in the financial account and income account.

At the vesting date, the employee is able to exercise the option as the employee has met the condition set by the contract of the stock option. Here, the employee has acquired asset that should be recorded as compensation of employees.

Also, the treatment of retirement benefits makes it very difficult for the SNA to record the value of stock options by dividing the amount evenly over a certain period.

The treatment of retirement benefits is very similar to that of stock options as stated above, and it should be noted that retirement benefits have similar characteristics with stock options. Retirement benefits are paid when an employee leaves his/her company, in addition to monthly/weekly salaries, as compensation for the employee's contribution to his/her company. The amount of payment is not decided until the employee's last day at his/her company.

The SNA does not divide the value of retirement benefits evenly over a certain period. The SNA treats retirement benefits as a single payment made to the employee on the day the employee leaves his/her company, and the amount recorded by the SNA matches the amount actually paid.

If the SNA records the value of stock options by dividing the amount evenly over a certain period, the treatment of retirement benefits would become different from that of stock options. In this case, the treatment of retirement benefits should be revised to maintain the consistency of the SNA system; such revisions do not seem acceptable for SNA as they would be large and some of them may affect the concept of the system.

Many suggestions have been made for the method to record compensation of employees. For instance, Eurostat (2004) suggests grant & vesting date method as most appropriate from the practical view point, but in concept, the vesting date method seems to be the most appropriate method from the viewpoint of financial accounts.

7) In case where business accounting treats compensation as expenses at the grant date, the issue would arise on their treatment under the SNA. The SNA should not treat stock options at the grant date as compensation of employees, regardless of their treatment in business accounting. Rather, it should not record compensation until they emerge at the vesting date and are paid to the employee in a single payment.

The amount necessary for compensation at the grant date should be treated as operating surplus. This treatment may cause a mismatch between business accounting and national accounting (SNA), but this is not surprising. The accounts have differences in their objectives so there are many cases where one thing is treated differently in business accounting and national accounting.

Nevertheless, the dichotomy between business accounting and national accounting should be reexamined to reduce the gap between them. Changing the treatment of stock options is inappropriate from the explanation above. Instead, the SNA could treat the amount necessary for compensation as capital reserves like salary reserves or service output/service self-consumption since revisions brought by this treatment does not seem so essential.

8) Another important issue is constraints when compiling statistics, especially the availability of actual data. Data availability problems lie in both financial and real activities.

Constraints differ according to countries and the SNA is compiled with consideration to these constraints. At the same time, consideration is made to maintaining consistency between financial accounts and real activities, as well as the consistency in the financial accounts themselves.

In theory, the vesting method is the most appropriate method to record compensation of employees in financial accounts, but it may need slight or somewhat important amendments because of lack of actual data concerning financial or real activities in many countries.

The SNA revision 1 is expected to be adopted by every country, but in reality, each country has its own constraints and difficulties. Further examination seems imperative to make final conclusions about the treatment of stock options in SNA revision 1.

References

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[4] United Nations "System of National Accounts 1993"